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EDITORIAL—SOME HIGHLIGHTS

I General Economic Scene

State :

Fourth Annual Plan: In December discussions were held between the officers of the State government and the Union Planning Commission in regard to the Fourth Annual Plan, 1977-78, for the State. The Third Annual Plan now under execution is of the order Rs. 201 crores, which is a 40 per cent increase over the Rs. 143 crores of the Second Annual Plan (see Vol V p 653). The Fourth Plan as formulated by the State is of the order Rs. 270 crores with emphasis on the core sector of power, irrigation, agriculture and the 20 point programme. There is in addition the rehabilitation programme of the flood ravaged areas in the city that will continue into the Fourth Annual Plan. The State government has submitted a relief and rehabilitation programme of Rs. 15 crores to the Union government. During the Fourth Annual Plan there should be a planned programme of additional investments, which have been held back both in the State and the country because of the aftermath of the super inflationary conditions in the first two Annual Plan periods. The major part of these investments will be outside the Plan's financial framework, in the sense that the Fourth Plan will provide only the seed money for the investments. From this point of view the decision of the South Regional Consultative Committee of the Nationalised Banks meeting in Bangalore in early December is sound. It is to set up a Committee in each State comprising representatives of the banks, RBI and of the State and Union governments which will gather and provide the relevant information needed by the State government for identifying areas of investments, on which Bank loans and advances will be made.

Monsoons and Prices: As noted in the last issue, (p 1) widespread rains of the North East monsoon which continued into the third week of December have filled irrigation tanks and improved the storage in all the reservoirs. At December 23, Manimuthur registered 27.20 metres out of its full level of 36 metres, Krishnagiri 10.31 metres out of 15.80 metres, Vaigai 15.67 metres out of 21.65 metres, Periyar 9.56 metres out of 14.64 metres, Sathanur

generation, due to the commissioning on November 10 of the 110 MW thermal unit at Panki extension, and 66 MW hydel unit at Ramganga on November 19. During the month, 3 States made relief supplies to the neighbouring States—Gujarat to Maharashtra (49 million Kwh), Kerala to Tamil Nadu (68 million Kwh) and Tamil Nadu to Karnataka (28 million Kwh). In addition, there were 35 inter-system transfers of power either statutorily or on a compensation basis. In November the shortfall in power for the conntry was 5.92 million Kwh. while in December it is expected to increase by more than two and a half times to 13 million Kwh. due to the increased irrigation load. The widest gap in daily power supplies and demand is in Karnataka at 3.90 million Kwh followed by Tamil Nadu at 3.46 million Kwh. The Union government sanctioned in December the first super thermal power project for the central sector, at Singrauli, Uttar Pradesh. The newly established National Power Thermal Corporation will take up this first national project which will have a generating capacity of 2000 MW ultimately, starting with a first phase of 3 sets of 200 MW each to be installed at a cost of Rs. 255 crores. After installing five such units, two units of 500 MW each will be installed. The power from the super thermal plant will flow into the Northern grid but also serve the Eastern and Western region.

Housing and Urban Land Tax: HUDCO at the end of November sanctioned 28 new schemes for the State under which 6,448 units will be constructed. Of this 4,637 units will be built for the weaker sections, 1,325 for the low income group and the rest for middle and high income groups. The schemes are located in Madras, Cuddalore, Madurai, Pudukottai, Hosur and Vellore. Under the 20 point programme, a further construction of houses for allottees of house sites on the basis of the Rs. 1,500 unit cost developed by the National Building Organisation is to be undertaken in the State. In December the State government formally approved the 20 year Master Plan for the *Madras Metropolitan Area* involving an estimated outlay of Rs. 1,000 crores. Under the Plan, the government will be spending Rs. 32 crores annually from 1977 for the development of infrastructure—roads, transport, water supply and drainage, housing for EWS and civic improvement project to meet future needs. Investment on housing for EWS and slum improvement will cost Rs. 17 crores, including an employment generation programme through small scale and cottage industries and social support programmes. In addition the ongoing projects of the State Housing and Slum Clearance Boards will cost Rs. 9.5 to 10.5 crores per annum, transport and traffic sector Rs. 10 crores and water supply and drainage Rs. 9 crores. The financing of the plan will be related to the nature of the project—land development by loans and grants, medical and educational facilities by grants, water supply and drainage on the basis of water rates and land development rates. The tax income will include octroi, turnover taxes, tax on floating population and commuters, fuel and power tax and levy on transfer of property. In this connection, the government announced in December a number of changes in the urban land tax to rationalise it and provide relief to the assessees. The changes are; abolition of distinction between lands used for residential purposes: grant of 50 per cent rebate in tax to owner occupied buildings; reduction in the rate on buildings above 10 grounds; 50 per cent rebate in tax on music sabhas; and a revised

market value of the land for the purpose of assessment at double the value of the property in 1963. These revisions go into effect as from the 1975-76 assessments and should lead to speedy and increased tax collections. All the resources suggested are to be pooled into the Metropolitan Planning Fund from which annual allotments are to be made. Shopping centres are to be relocated in three areas, the main streets widened and strengthened, a minimum area of one ground for a building, the 3 fold division of the Metropolitan area into the central core fully developed area, the second city area and the residential metropolitan area and for each taxing rules have been framed. The Union government has approved the Master Plan and will provide it with assistance. The State government announced in December that the Madras Metropolitan Development Authority in addition to its planning responsibilities is to be vested with executive powers to function as the permanent authority for the development of the city. Among other powers it will be responsible for reclamation of land in the city, operate a revolving fund of the sale proceeds of the reclaimed land and settle slum dwellers in such reclaimed land. It will overhaul the city's drainage system, raise the levels of low lying areas, and design safety measures for the 3 water ways skirting the city and the 4 lakes surrounding it.

Transport : Further to the projects in the Madras Port reported in the last issue (pp 4-5), an export cargo complex has started functioning in the harbour from January 1. It comprises all the agencies concerned with export transactions and functions on the basis of the findings of a study cell wich has under review the trends—present and future—of exports passing through the port. There is also underway a reexamination of port charges in regard to particular items of cargo where the charges are high compared to their cost structure and review of the port documentation procedure with a view to its simplification undertaken by the port consultative committee on major ports. To deal with heavy engineering goods that are being exported, the harbour has on order one heavy duty crane and a heavy duty fork lift for transport of cargo weighing 40 to 50 tonnes including containers. On railway transportation, on the basis of the Rs. 10 crores sanctioned by the Railway Board, the suburban electrification project between Madras and Trivellore and Madras and Gummudipundi will be completed by April 1979. Also a shed to house the electric multiple unit coaches is being erected at Avadi and orders for EMU coaches have been placed with ICF for those 2 electrified tracks. The State government is acquiring 18 acres of land in the Meenambakkam village for the domestic terminal complex of the Madras airport. Also arrangements are being worked out for the quick handling of passengers baggage in view of the airbus which has gone into operation between Madras and Bombay, involving use of several conveyor belts in the arrival hall. For quicker handling of export and import articles, the International Airport Authority is constructing a cargo terminal which will be ready for use by mid January. On the telecommunication side, in December the 500th telephone exchange was opened in the Somangalam village in Chingleput district, making the State the third telecommunication circle to have 500 exchanges. Another trend reported is the surrendering of telephone connections for economic reasons by subscribers. In the period April-November, against 3,200 new lines given, there had been 2,900 disconnec-

tions. On an average there were 400 monthly new applicants with also 350 disconnections. As a result the waiting list had been wiped out in the State everywhere except in Salem, Erode, Tiruppur and Madurai, where only 60 per cent of the 1,750 new connections have been granted. This decline in telephone demand seems to be special to this State and may be an indicator of the status of inter-State growth.

Welfare: In regard to prohibition, the State government has reached agreement with its neighbouring States—Andhra Pradesh, Karnataka and Kerala—for a dry belt around Tamil Nadu in order to stop the illicit import of liquor from those States. The details of the belt are being worked out. In addition, the government has placed restrictions on the movement of alcohol from one wet area to another when transiting through this State for which a license is now required. 14 licenses for manufacturing 15 lakh litres of denatured spirit have been cancelled, the governments of Uttar Pradesh, Bihar and Maharashtra have been requested to control the production, sale and movement of chloral hydrate which illicit distillers in this State use in producing intoxicating drinks and the drive against illicit distillation stepped up. In the first 8 months of the year 3.5 lakh cases have been detected and dealt with. With regard to the programme for resettlement of repatriates from Sri Lanka and Burma, the Union government has increased its funds to this State. Repatriates from Burma who were settled in the Gummudipundi camp are being shifted to work in a State Farm Corporation project in Neyveli. With Rs. 35.50 lakhs from the Union government, a Heavy Vehicles Mechanic Training School is being set up at Gummudipundi to provide a 2 year intensive training to 250 repatriates at the end of which they will be given heavy vehicles driving licenses for employment in public and private sector undertakings. The State government has reserved 5 per cent of ITI seats for the repatriates, to be increased in time to absorb 1,000 repatriates. So far 1,115 repatriates have been employed in the 10 co-operative spinning mills and each repatriate given Rs. 15,000 as loan towards his share of equity. In the Gummudipundi and Vyasarpadi areas, 5,400 flats are being constructed, out of which 3,132 flats are allotted to Burma repatriates. The State government sanctioned Rs. one crore for tribal welfare schemes, (roads Rs. 66 lakhs, sheep rearing Rs. 12.5 lakhs and medical facility Rs. 5.85 lakhs) in Salem, North Arcot, South Arcot, Dharmapuri and Tiruchirapalli districts. This means that the total tribal development programme will cost for this year Rs. 3.5 crores The larger programme of Rs. 7.94 crores (see Vol VI p 492) is still under study. Further the Government announced in December that its outlay for 1977-78 for special development of scheduled castes (in addition to the normal harijan welfare schemes) is Rs. 28 crores. The special development works to be covered by this additional allotment are agriculture, animal husbandry, drinking water supply, fisheries, rural electrification, rural roads, health, panchayat raj, primary education, cottage industries and industrial training. In addition there are some 165 schemes that the Union government has urged that should be developed for the scheduled castes from general sector resources.

National :

Budget Preparation and Central Loan : During December the Finance Minister held consultation with Economists, Industrialists and Labour Leaders. The major trends for budget policy arising from these preparatory talks were the need to increase sharply public investments, to strengthen and widen the public distribution system, to deal more effectively with the problems of the rural poor, and the maintenance of price stability (in the consultations with economists); the need to increase investments which would generate major employment opportunities without leading to inflation (in the consultations with labour leaders); the need to further revise the tax structure to remove anomalies and bring down prices (in the consultations with business leaders); and the need to raise additional resources through selective taxation. The budget will be based on an assessment of the performance of the corporate sector in light of the concessions, reliefs and incentives granted in the 1976-77 budget. For the Fourth Annual Plan, the outlay is likely to be between Rs. 9.000 and Rs. 9,500 crores out of the Rs. 19,907 crores left for the last two years of the current plan. This will involve revising an additional Rs. 900 crores through the next budget and from the public sector undertakings. Two resources that the budget can and should use are increased domestic savings to generate a higher rate of growth and the use of the food grain buffer stock and the growing foreign exchange reserves as further engines of growth. The Union government announced on December 21 reissue of two loans for Rs. 100 crores to be closed on December 28-30. Market borrowings so far have been Rs. 533 crores, exceeding the budget estimate by Rs. 18 crores.

Price and Anti-inflation : The Index number of wholesale prices for November resumed its upward trend. As against the decline registered on October 30 at 309.9 analysed in the last issue (p 6), the index number at November 27 was 313.5. The rise was due to the 3 per cent rise in the price of groundnut oil, the continued rise in industrial raw materials, cotton one per cent, jute 3 per cent and groundnuts 2 per cent and the rise in the price of cotton yarn. One of the major causes for the price rise is the increase in money supply which increased by Rs. 108 crores for November, composed of decrease in currency with the public of Rs. 30 crores and increase in Bank nearly by Rs. 159 crores. While net bank credit to government in November was Rs. 110 crores, bank credit to the commercial sector rose to Rs. 233 crores. The Union government admits that for the period March to October expansion in money supply has been 10.4 per cent compared to half the rate at 5.2 per cent during the corresponding period in the previous financial year. The government plans to limit bank credit to 12 per cent for the current financial year, compared to the previous year's 9.7 per cent. The Reserve Bank in analysing the rising price trend calls for short run measures to improve supplies of price sensitive commodities, restriction or deferment of exports of these commodities —such as groundnuts and sugar. It also affirms the need to continue with monetary restraints to correct the imbalance of aggregate demand (money supply) and aggregate supply. The recent monetary expansion referred to earlier it attributes to the inflow of foreign exchange, increase in credit for food

procurement, the reflationary impact of the budget, the step up in investment and credit to the *commercial sector and the* general liquidity of the banking system. This inventory contains a rather disparate list of items, the main items being the pressure exerted by the foreign exchange inflows and the leaks in the food procurement credit. As the government has rightly decided not to use the foreign exchange resources to pay back a part of the country's debt with a view to conserving the country's capacity to import needed goods and service for its industrial growth, the investment of these resources becomes a matter of high *priority.*

National Income : RBI's review of the state of National Accounts for the period 1960-61 to 1974-75 in its September *Bulletin shows that the increase in* National Income in real terms during this period was 3.7 per cent. In 1973-74 it was 5 per cent over 1972-73 but fell to 0.2 in 1974-75 over the previous year due to the decline of 4.3 per cent in the net domestic product from the agricultural sector. The average annual growth of agricultural production during this period was 2.7 per cent, of foodgrains 2.4 per cent. In per capita real terms (at 1960-61 prices), 1973-74 *records an income of* Rs. 347.2 (2.8 per cent increase) and Rs. 341.2 for 1974-75 (a decline of 1.7 per cent). Manufacturing industry increased at the rate of 5.4 per cent per annum. The per capita national income at constant prices increased 1.3 per cent over this period, while population increased at an annual rate of 2.2 per cent. On the structure of production, agriculture occupies the primary place, though at a declining rate from 52.2 per cent contribution to NDP in 1960-61 to 42.6 per cent in 1973-74, while the secondary sector has remained stagnant over the last 10 years at between 22 per cent to 24 per cent. This is surprising because the share of the secondary sector in gross capital formation is the highest at 44-47 per cent. The contribution of the public sector to NDP increased from 10.7 per cent to 14.3 per cent in this period, while that of the private sector has declined from 89.3 to 85.7 per cent, and within the private sector the organised sector's contribution has moved up from 25.6 per cent in 1960-61 to 30.4 per cent in 1974-75, while that of the unorganised sector has declined from 74.4 per cent to 69.6 per cent. *During this period, analysis of* private consumption expenditure shows the largest, 57.4 per cent on food with a declining trend, a stable trend in clothing and a sharp rise in medical expenses. With these high average and marginal propensities to consume, the economy shows low propensities to save ranging from 8.4 per cent of NDP to 13.2 per cent in 1972-73 down to 12.2 per cent in 1973-74 and 11.8 per cent in 1974-75. *The major saving component is that of* the household sector ranging from 67.9 per cent in 1960-61 to 82 per cent in 1972-73 and 75.6 per cent in 1973-74, 45 per cent of such saving is in physical assets which rose at an annual average of 28 per cent, while the remaining financial assets rose at a higher annual 43 per cent. Among physical assets, household construction was an important element, while among financial assets, investments in shares declined both in absolute and percentage terms from Rs. 67 crores (14.7 per cent) in 1960-61 to Rs. 49 crores (1.6 per cent) in 1973-74, while bank deposits rose from Rs. 11 crores (2.4 per cent) in 1960-61 to Rs. 913 crores (30.5 per cent) in 1973-74, indica-

ting a growing in banking habits. The other large components of financial savings were life insurance, growing from Rs. 50 crores (11 per cent) in 1960-61 to Rs. 324 crores (20.8 per cent) in 1973-74 and Provident Fund from Rs. 126 crores (27.6 per cent) in 1960-61 to Rs. 661 crores (22 per cent) in 1973-74. Aggregate investment or net domestic formation at constant prices increased during the period by 80 per cent or 6 per cent per annum, declining from 13.8 per cent in 1972-73 to 13 per cent in 1973-74 and 12.8 per cent in 1974-75, revealing that the rise in the savings rate did not lead to increase in the domestic capital formation rate during the latter years due to the decline in net inflow of foreign capital from 3.4 per cent of NDP in 1960-61 to 0.8 per cent in 1973-74. The public sector at 55.7 per cent in 1973-74 retained its lead in capital formation, while the household sector's share was 16.4 per cent and that of the private corporate sector was 29.7 per cent. Over the period the proportion of private corporate investment to the total has declined even compared to that of the ho usehold sector. For 1975-76 a study by the Economic Times shows a decline in both capital formation and investments in the private corporate sector. The rate of capital formation for all private sector units for 1975-76 is 4.3 per cent compared to 18.2 per cent in 1794-75 due to a sharp fall in inventory build up. Net savings also fell from Rs. 558 crores in 1974-75 to Rs. 249 in 1975-76. Investment in the private sector declined from Rs. 1,048 crores in 1974-75 to Rs. 1,022 crores in 1975-76. The earlier year's decline is in part due to fluctuation in agricultural production, in the last 2 years it is a reflection of recessionary trends in some industrial sectors. A kind of forced savings approach to capital formation in the last 3 years has been adopted through investing the large accumulating Provident Fund in Union and State government enterprises. Out of Rs. 4,195.30 crores with the Central Provident Commission, Rs. 2,955.42 crores have been invested in Central and State government securities and small savings. In a further study of the data collected by the All India Debt and Investment Survey of 1971-72, RBI points out that out of the total 770 lakh rural households, of which 558 lakhs (72.4 per cent) were cultivator holds, over a third (270 lakh households) had assets below Rs. 2,500 each. This includes 20 per cent of all cultivators, 90 per cent of agricultural labourers, 72 per cent artisans and 65 per cent of other cultivators—constituting the weaker sections of the population. 30 per cent had land valued at Rs. 800 per household, 50 per cent cattle valued at Rs. 250 per household, 55 per cent owned machinery valued at Rs. 50 per household, 43 per cent owned shares in co-operatives and 42 lakh households did not have a residential base. The poor households predominated in Tamil Nadu (54 per cent), Andhra Pradesh, West Bengal and Orissa (43 per cent). Inequality in asset holding is pronounced in Tamil Nadu with a concentration ratio of 0.71 as against Jammu and Kashmir with 0.44. If all the households possessing assets below Rs. 2,500 represent the poor in rural areas, then 35.2 per cent of rural households in the country are in this category. It is against this background that the December meeting of State Secretaries in Delhi decided that State administration will concentrate on improving the quality of service for the weaker and poor sections in rural areas. Also the Union government has decided that from January 1, 1977 the scheme of investment subsidy for promotion of industrial

development in backward areas will operate, making industries moving from cities to backward areas, expansion by 10 per cent in the value of fixed capital invested there, and the hotel industry eligible for such concession. The other part of the programme for increasing the income earning capacity of the rural poor is through the change in assets holding and the development of agriculture and related activities.

Industrial Growth : The rate of industrial growth for September 1976 declined from 128.1 per cent in August (revised downwards from 130.4 per cent reported in the last issue p 8) to 127.7 per cent. This means that the first 9 months rate stands at 11 per cent against the 13.2 per cent for the first 8 months. It will be noted that since March when the index stood at 138.2 per cent there was been a steady decline in industrial growth. The September decline was due to a steep fall in production of chemicals and electrical machinery.

National Production Front:

Steel: The total output of steel for the first 8 months, April to November, was 4.44 million tonnes, which was 7 per cent higher than the target of 4.15 million tonnes and 23.1 per cent higher than the first 8 months of the previous year. Bhilai produced during this period 1.32 million tonnes against the target of 1.19 million tonnes, Durgapur 5.6 lakh tonnes against the target of 5.49 lakh tonnes, Rourkela 7.52 lakh tonnes against 6.75 lakh tonnes, Bokaro 4.61 lakh tonnes against 4.12 lakh tonnes, TISCO one million tonnes against 9.86 lakh tonnes and IISCO 3.45 lakh tonnes against 3.33 lakh tonnes. For November Bhilai, Rourkela and Bokaro surpassed their targets at 2.08 lakh tonnes 1.16 lakh tonnes and 86,800 tonnes respectively, while TISCO produced 1.62 lakh tonnes against its target 1.63 lakh tonnes and IISCO 53,600 tonnes against 63,000 tonnes. Production at Durgapur Alloy Steel for the 8 months was 34,290 tonnes against the target of 28,320 tonnes, and all plants produced pig-iron above their target at 1.3 million tonnes against 1.12 million tonnes. Durgapur steel though producing above target and expected to end the year wtth 8.25 lakh tonnes against its target of 7.51 lakh tonnes will end the year with a higher loss of Rs. 24 crores against the previous year's loss of Rs. 20.05 crores due in the main to its product mix which needs change. Demand for steel is slowly picking up, the sales in November showing a rise. Bokaro announced that the fabrication of 6 of 13 process lines for the cold rolling mills to raise its output to 4 million tonnes a year will be undertaken entirely in the country—a major step in import substitution.

Crude : The major development in December was the OPEC decision to increase the price of crude by 10 per cent from January 1 and 15 per cent from July 1. This means that India's crude import bill will increase by Rs. 74 to 100 crores for 1977, during which period the Union government has decided to import 13.5 million tonnes. As at December, 9.1 million tonnes of crude import has been assured on a result of various bilateral arrangements. 4.76 million tonnes of this will be at a price rise of 5 per cent and the rest at 10 per cent. Of the remaining 3.4 million tonnes, Egypt which was to have supplied 5 lakh tonnes in 1976 will be providing it in early 1977, Exxon will supply 1.72 million tonnes to HPC under the agreement and the agreement with the Soviet

Union to supply 5.5 million tonnes of crude over a 4 year period under the Rupee trade agreement, will start with one million tonnes supply in 1977. (This agreement not only meets India's demand for crude without loss of foreign exchange, it also helps the Soviet Union to balance its growing trade with India in which it faces a deficit). The total demand for crude in 1977 is estimated at 24.5 million tonnes—against the 1976 demand of 22.5 million tonnes. The balance over the imports is to be met from increased indigenous production. As against the production of 5 lakh tonnes by Bombay High in 1976, in 1977 its production will be 2 million tonnes. In early December, Bombay High was producing 15,000 barrels a day which was stepped upto 40,000 barrels a day by the end of December. There more production platforms are being built to increase production from the 4 wells to 2 million tonnes. In addition to the 5 offshcre rigs, a sixth rig is being employed for development drilling and drillings in the Bassein North and Bassein South basin are being intensified. In addition plans are underway to produce 2,327.8 million cubic metres of gas in 1977 from Bombay High and Assam to be used as feed stock for fertiliser and petro-chemical plants, for power generation and for industrial and domestic uses. Also Oil India is stepping up its crude oil production from 3.09 million tonnes from the Assam Arunachal fields by 50,000 tonnes, particularly by intensive drilling in the Jorajan area, and Kharsang-2 and 3 in Arunachal Pradesh. It is adopting secondary recovery processes including polymer flooding, gas injection and water flooding to increase from existing and new wells. The complete take over of Assam Oil company as well OIL now being finalised by the government will help this process.

There remains the equally important question of conservation and economising in the use of crude, petroleum and its products on which the government would like a saving of Rs. 125 crores this year. In 1976 HSD use increased by 7-8 per cent, naphtha demand by 25 per cent and kerosene by 1.4 million tonnes. A five phased programme was formulated in December to save Rs. 100 crores in Diesel consumption through spill proof fuelling practices, good driving habits, calibration and maintenance of fuel injection equipment, vehicle maintenance and management control systems. To implement this programme (a) each oil company is to take up one State transport depot, (b) the STU is to work out standard norms for diesel consumption by vehicles, (c) import controls on technical equipment used for conservation are to be relaxed, (d) goods traffic components are to be brought under this regime and (e) higher pay load vehicles and improved roads and bridges as a means of saving of fuel are to be attended to. A change in the fuel oil consumption pattern in the industrial sector, substituting coal for oil (see Vol VI pp 371 and 640) should be speeded up particularly in the power sector, textiles, cement, brick burning, sugar and tea plantations. During 1976 a substitution of 0.2 million tonnes and since 1974, 0.8 million tonnes of substitution has been achieved saving Rs. 50 crores in foreign exchange. There is still some resistance from the Gujarat power plants and the Maharashtra and Tamil Nadu textile mills to the change over. For this, the supply coal should be assured and made dependable and the pollution problems dealt with through use of Coal India's stokers. Of the 80 mills in Bombay, 50 should change over to coal immediately and all the Coimbatore mills should do so. Over 20 tea

plantations in the South and 15 in Assam have switched to coal. In the sugar sector, the co-operative mills should set an example by immediate switchover. In 1977 the target for switchover should be set at saving Rs. 70 crores. For the saving on kerosene the rapid spread of gobar gas is a real possibility. It can also be used to save the use of diesel oil. A 5 HP diesel engine consumes 10 litres a day. Substituting even 20 per cent of diesel by gobar gas, which has been demonstrated, can save 2 litres of diesel per day or 500 litres per year, saving Rs. 250 per year. If 80 per cent gobar gas substitution were made, as had been shown to be possible, the saving would be Rs. 1,000 per year. The gobar gas can be used without any modification of existing engines. IDBI has offered to finance all economising efforts, the switch from fuel oil to coal requiring a capital from Rs. 30 lakhs to Rs. 1.5 crores.

Coal and Iron-ore : Coal production is increasing to 100 million tonnes for the year. Coal India has developed a long term plan to double the country's coal production to 200 million tonnes by the next decade at a cost of Rs. 3,000 crores. The Plan establishes the necessary policies relating to conservation, finance, recruitment, training, safety, industrial relations, wages, marketing purchase of stores and utilisation of coal resources. NMDC reports that production of iron-ore during the 8 months April-November was 51.3 lakh tonnes against a target of 50.70 lakh tonnes and for the year is estimated at 77 lakh tonnes. During this period despite the slackness in the iron and steel Industry abroad, MMDC exported Rs. 34 crores worth of iron-ore compared to Rs. 31 crores earned in the first 8 months of 1975-76.

Copper end Bauxite : Hindustan Coppers production record for the first 8 months, April to November, was unsatisfactory at 13,565 tonnes, a small increase of 488 tonnes. Its Ghatrila Unit increased production by 2,044 tonnes but its Khetri unit registered a decline of 1,566 tonnes. The Khetri unit needs to be restructured, its production showing a steady decline during the 8 months, with complete shut down in April and October. With the revised estimate that the bauxite ore reserve at Phutakapur will be exhausted in 2 years instead of lasting for 5 years as GSI forecast, and the reserves of Amarkantak being revised downward from 19.9 million tonnes to 8 million tonnes, BALCO has closed down its Phutakapur unit as unviable (after spending Rs. 2.5 crores on development machinery) and is exploring for bauxite at nearby Rewa and Borda. This setback to the Korba aluminium plant of Bharat Aluminium means that it will have to explore for bauxite at Gandhamardhan at Orissa, though the transport costs raise questions of its economic functioning.

Shipping : To avoid competition among public sector shipping units, a central agency is to be established to allocate orders by Indian ship owners to the shipyards. In December, Hindustan shipyard reported that it had orders for only 6 vessels while it has a capacity for 10 vessels and at the same time orders for imported vessels by shipping companies are on the increase. On their side, the shipyards will have to develop designs to meet the changing demands of ship owners for 13,000 to 18,000 dwt liner vessels and 6,000 to 9,000 dwt cargo vessels. An area that is potentially large is the specialised vessels needed by ONGC and the trawlers for fishing to which also the yards will have to be

adapted. There is also the questions of comparative costs, the imported vessels costing on the average 30 per cent less than Indian built vessels. From this point of view, the three schemes for further development of the shipyards by Hindustan Shipping are important. Along with improved management, the schemes call for an integrated investment programme ranging from Rs. 26.90 crores to Rs. 36.91 crores, with a rate of return between 12 and 19 per cent. The schemes involve improvement of steel working, prefabricating and outfitting with differing building berths.

Textile and Cotton: The Cotton Advisory Board estimates that cotton production in 1976-77 is likely to be 67.50 lakh bales, consisting of 18.50 lakh bales from Punjab, Haryana, Rajasthan and Uttar Pradesh, 21 lakh bales from Gujarat, 4.5 lakh bales from Madaya Pradesh, 9 lakh bales from Maharashtra, 5 lakh bales from Karnataka, 6:50 lakh bales from Andhra Pradesh and 3 lakh bales from Tamil Nadu. To increase the supply, government had released Rs. 140 crores for import of 5 lakh bales, of which as at December, CCI had contracted for the import of 3.5 lakh bales plus 22,500 bales from the Soviet Union. In regard to man made fibre, licenses have been issued for import of 4.5 lakh bales of polynosic viscose staple fibre for Rs. 77 crores and 3,600 tonnes ef polyete fibre. The total supply this season will thus be 91.49 lakh bales against an estimated demand of 77.50 lakh bales. Put in another way the raw material demand for the current season will be 94 lakh bales including 18 lakh bales carryover, while indigenous cotton supply will be 79 lakh bales including 14 lakh bales carryover from last year. The rest is imported. The government also announced at the end of November that it is reviewing the policy on production of controlled cloth and in the interim instructed the mills not to limit their obligation to produce controlled cloth as had been done for the quarter July-September 1976. In fact in early December the Textile Commissioner issued show cause notice to 19 mills which had defaulted on their controlled cloth production to the extent of 35 million metres for the quarterly July-September. The result is that the allocation of the cloth to the co-operative distribution net work has been reduced at a time when its demand is rising. The mills allege that they have done this to recoup their losses following from the rise in cotton prices by 56 per cent between September 1975 to October 1976, while yarn prices have risen only by 28 per cent and cloth price by 5 per cent in that period; they point to the closure of 22 mills in the first 10 months of 1976 including 8 mills in October alone, with an overall total of 41 closed mills. Tamil Nadu with 8 closures has the largest number, followed by 6 closures in Gujarat. In addition to government steps to curb rising cotton prices, more liberal credit supply and increased imports, the government is also examining the cost structure of the mills and reviewing the controlled cloth obligation as noted earlier.

Jute: Jute production increased in November to 92,600 tonnes compared to 81,000 tonnes in October and stocks declined from 1,43,500 tonnes in October to 1,28,300 tonnes in November. But this improved offtake was the result of continuous fall in prices over the last 15 months, making jute good prices competative with those of synthetics. The industry continues to make losses, its exports are only 40 per cent of its production against 64 per cent 10 years ago.

and the industry stands in need of help through the abolition of the excise duty on sacking as recommended by the Bose Mullick Committee, the abolition or reduction of the multi-point sales tax, larger soft term loans to modernise the industry and the finding of new end uses for its products. It is also hoped that the Jute International (see Vol VI pp 577 and 648) will be formed soon, which will enable a more effective and larger R and D effort to be undertaken, along with an improvement in the demand for Jute goods.

Cement and Sugar : The Cement Corporation reported poor offtake of cement as at the end of December. In the hope that the orders will pick up, it is going ahead with plans to expand its capacity from 6 00,000 tonnes in 1976 to 10 lakh tonnes in 1977 and 22 lakh tonnes in 1978. In the Sixth Plan, its capacity will be further increased to 30 lakh tonnes. It is also expanding its export of special types of oil well cement and sulphate resistant cement at its Boakjan Plant in Assam, which are in growing demand in the Gulf countries. Also CCI is setting up plants in Himachal Pradesh and Arunachal Pradesh which have no facilities. On the sugar front, the Union government has addressed itself to the problem of non-payment of dues by factories to cane growers. It has advised State governments to modify their laws to provide for prompt payment by factories, for addition of 12-15 per cent interest in case of delay and for recovery of cane price arrears as land revenue arrears are recovered. As at September the payment dues were Rs. 19.65 crores and payments made Rs. 19.15 crores, leaving a total balance of Rs. 50 lakhs (compared to the arrears of the 2 previous seasons at Rs. 3.98 lakhs and Rs. 3.69 lakhs respectively). Tamil Nadu government has maintained a good record of payment made within 14 days.

Automobiles and Floods : In view of the continued poor demand for motor cars, the Union government announced in December that motor car manufacturers can diversify their production to other motor vehicles and machine tools. For the three motor car manufacturing units diversification is permitted within the overall licensed capacity of each undertaking. The diversification permitted will not cover items reserved for small scale industry. On the floods question, with the extensive damage in the November/December floods in Andhra Pradesh, and Madras, costing around Rs. 60 crores and the damage to 45 lakh tonnes of standing paddy, the inauguration of the National Flood Commission in December in Delhi has not come a day too soon. The Commissioner is engaged in developing a long term and short term programme to deal with floods, starting with building and strengthening embarkments on to the more effective storage of the monsoon waters. One important programme is to use technology to increase the flow of water into natural underground storages as well as diversion of waters to arid areas.

Agricultural Production : As of December 1, procurement of kharif rice has touched one million tonnes, which was the same as at December 1975. Punjab led in procurement with 6.56 lakh tonnes (4.52 lakh tonnes last year), Haryana 1.47 lakh tonnes (1.37 lakh tonnes last year), Uttar Pradesh one lakh tonnes like last year, Andhra Pradesh 17,422 tonnes (15,293 tonnes last year), Tamil Nadu 15,341 tonnes and Karnataka 10,653 tonnes (11,577 tonnes last year).

The total rice procurement target for this kharif is 4.4 million tonnes. FCI is increasing the country's storage capacity from 17 million tonnes to 21.5 million tonnes, building an additional storage capacity of 3.2 million tonnes, with a World Bank loan. Also above 6 million tonnes of foodgrain imports in 1976 which was an inflow from 1975 contracts have had to be stored. The storage problem was somewhat eased with the freeing of the movement of wheat products, atta, maida etc. and the creation of the Southern Food Zone both referred to earlier. The offtake from the Central pool by the States is small—of the small 6 million tonnes of wheat allocated from January to October only 4 million tonnes have been lifted. By the end of December, rabi sowing was completed, with the total area under wheat crop being 2 lakh hectares more than in the 1975 season, the main increase being in Bihar and West Bengal. Though winter rains have been sparse, as wheat in Punjab, Haryana and Western Uttar Pradesh is to the extent of 97 per cent under irrigated conditions the sowing operations are unaffected. But the final outcome of the rabi crop will depend on the rains in early January, particularly in the case of rabi gram, barley and mustard seed. Punjab and Haryana are also growing intensively two important foreign exchange earners from the European and Persian Gulf Countries—Basmati Rice and Potatoes. Both Punjab and Haryana are having a bumper potato crop this year. In Punjab the crop will exceed 6 lakh tonnes (against the previous year's 5 lakh tonnes) and Haryana 2.5 lakh tonnes (as against the previous year's 2 lakh tonnes). This good harvest is due to the use of the HYV potato varieties developed by the 2 State Agricultural Universities. India is joining 7 other Asian Countries in R and D on small farm mechanisation. ICAR's Central Institute of Agricultural Engineering at Bhopal will develop small farm implements for dry land and black soil regions, such as medium size village equipment, low HP combine, appropriate power tiller, multiple row seed and fertiliser drill, manually operated transplants, power operated knapsack spreader, low lift irrigation pump thresher, reaper binder harvester and stripper harvester. The Union government has set up a task force, under the Chairmanship of the Director General of ICAR to review the forecasting of yields of major crops. Such reliable forecasts are badly needed to help the government to make correct and timely decisions on grain storage, buffer stock policies, support price operations and import-export strategy. The three Southern States—Andhra Pradesh, Karnataka and Tamil Nadu—are preparing action plans for dry land farming for the 1977 kharif season with details of cropping patterns and input needs for execution in the drought prone areas in the 3 States. The plan will also include animal husbandry, their health cover, feed and fodder requirements and marketing arrangements. There will also be an integrated and co-ordinated approach between the various departments to implement effectively minor irrigation, afforestation, cattle development, sheep rearing, piggery and poultry schemes in the dry areas. For the country generally a programme of improved fertiliser use is being launched through better management, introduction of bacterial culture to stimulate fertiliser consumption through nitrogen fixation by symbiotic bacteria as well as nonsymbiotically and along with organic manure. The proper and economic use of fertiliser is imposed by the increase in petroleum prices referred to earlier. On the agricultural credit side

the Union government has asked the State governments and Commercial Banks to join together and set up Farmers Service Societies where the chain of rural banks are opened. The State governments have been asked to take legislative and administrative measures to facilitate commercial bank lending to agriculture and for the State and district level committees to meet regularly and supervise this important operation.

Exports : During the first seven months, April to October, the country registered a favourable trade balance of Rs. 75.30 crores. Exports during this period increased by 34 per cent, compared to the first seven months of the previous year, at Rs. 2,750.37 crores and imports declined by 9.9 per cent in relation to the corresponding period of the previous year at Rs. 2,675.01 crores. This is a good performance as there was a fall in the exports of sugar and silver during this period compared to the previous one. As noted in the last issue (p 16), this does not mean that the year will and with a favourable trade balance, nor is it desirable that it should as there is need to import capital goods and consumer goods which are in short supply and this will tip the balance. The unit value of India's exports with 1968-69 being the base year improved from 239 in 1974-75 to 280 in 1975-76 and the unit of value of India's imports also increased from 183 to 197 in the 2 years. The country's terms of trade deteriorated from 1973-74, being 124 in 1972-73 and 106, 77, and 70 in the next 3 years. This was mainly due to the sharp rise in the price of foodgrain, fertiliser and crude during these years. This compensates in the sense the fact that while in 1975-76 World Trade increased by 6 per cent in value terms and nil in quantum terms, India's exports for that year, increased by 18 per cent in value terms and 6 per cent in quantum terms. For the first seven months of the current financial year, the good export performers were: Cotton Textiles which is doing so well that its target has been increased from Rs. 400 crores to Rs. 470 crores, including ready made garments from 180 crores to Rs. 225 crores and handlooms at Rs. 46 crores; (In the first 2 months cotton textiles exports have amounted to Rs. 80 crores): rayon textiles exports during the April-October period have increased by 88 per cent at Rs 17.2 crores which is more than the entire 1975-76 export of Rs. 16.7 crores: silk exports which were Rs. 17.21 crores in 1975-76 and are in growing demand as Japan ceases to be an exporter, will reach Rs. 21 crores for 1977-78: handicrafts which earned Rs. 200 crores in 1975-76 show a 20 per cent increase in the current year earnings: other good performers include the engineering goods sector which will over fulfil its target of Rs. 550 crores and move on to Rs, 1,000 crores by 1978-79, given the average 30 per cent unutilised capacity in the sector (in the first half of 1976-77 engineering exports rose by 32 per cent, notably in transmission line towers, wires and cables, vehicles, machine tools, steel pipes and tubes, wire products, bicycles and electronic items): farm based products including fish and animal producs which in 1975-76 earned Rs. 1,455.6 crores in exports, have on a limited number upto December earned Rs. 390 crores and will go upto Rs. 1,015 crores this year for this group consisting live animals, meat, dairy products, eggs, fish, cereals, fruits and vegetables, beverages, groundnut and oil (which is here a fast expanding export market): orher export performers include leather and leather

goods. In December the Indo-Czechoslovakia rupee trade agreement was signed which increases trade with Czechoslovakia by 5 per cent for 1977, including Rs. 100 crores of engineering goods. In India, the Indo-Soviet trade plan was signed providing for a trade turnover of Rs. 900 crores, which with the agreement on crude supply referred to earlier will increase the amount to Rs. 1,000 crores—a 15 per cent increase over the 1976 trade. Similarly the India-Poland agreement for 1977-80 provides for expanding trade in a diversified group of exports and imports. Also the Indo-Hungarian agreement signed in December provides for a 58 per cent increase in the trade turnover between the 2 countries in 1977 at Rs. 71 crores against Rs. 45 crores for 1976. Italy's imports from India doubled in the first quarter of 1976 and are on the increase. To further promote engineering exports the government has decided to expand cash assistance to exports upto March 1979. This will help the exporters to plan their production schedules and strategy with an assurance of stable assistance. To enable also the engineering sector to expand its share of world engineering exports which is currently 0.15 per cent, its modernisation programme is being speeded up and the IDBI has been instructed to provide the funds for early action in this regard. Also the facility of advance duty free import licenses for export production has been extended to further items. Reflecting in part the improved trading position of the country, RBI revised upward its rates for purchase and sale of pound sterling which is the 8th upward revaluation in terms of the pound undertaken since the Rupee was delinked from the pound in 1975 (see Vol V p 587).

Aid: In December, Norway made a grant of Rs. 2.33 crores for support of the All India hospital post partum programme and the family welfare planning effort. Also in December Japan signed an agreement with India giving a debt relief loan of Rs. 50 crores (12.2 billion yen) at a rate of interest of 2.5 per cent repayable in 30 years with a 10 year grace. Under an agreement signed between EEC and India in December, $ 10 million is being made available by EEC for the development of irrigation and livestock in Uttar Pradesh and ICRISAT in Hyderabad.

International:

Bangla Desh: India and Bangla Desh resumed their discussions on the Farakka Dam waters in December in Dacca. There was not much progress made in this round of talks which were adjourned for a later meeting in the month, when there will be official reaction to the position taken by the 2 countries on the sharing of the waters. ADB gave Bangla Desh a credit of $ 25 million in December for financing long term and medium term loans to its industrial sector.

World Monetary Reform: In December on the World monetary reform side four events should be referred to. First the debt position of the non-oil producing developing countries spurted disturbingly from $ 98.45 billion in 1973 to $ 125 48 billion in 1974. The IMF survey which revealed these figures also shows that rate of growth of the external indebtedness of the countries has accelerated from an average annual 13.8 per cent in 1967-71 to 19 per cent in 1971-74. In 1974 the growth rate was actually 22.6 per cent, with indebtedness to official lenders going up by 17.9 per cent, while indebtedness to private foreign lenders went up by 33 per cent. Further debt servicing

also showed the same disturbing rising trend: from 1967-71 it grew at annual 15.6 per cent but during 1971-74 it has shot up to 23.2 per cent. The second event was the fifth gold auction sale by IMF on December 8 of 7,80,000 ounces at $ 137 per ounce. This was the highest price so far obtained and brought in a profit of $ 75 millions, making the total in the fund $ 320 million. IMF has decided to hold monthly auctions from March at which 5,25,000 ounces will be put up for auction each time. It also announced that from January it would return gold to the member States who had deposited it as part of their subscription. This will involve the countries buying back 6.25 million ounces to start with, leading eventually to the distribution of 25 million ounces. The member States will pay for their gold at SDR 35 per ounce. The third event was the UK currency and economic position generally. In December, the leading financial powers in the group of ten agreed to make $ 2,944 million available to IMF to finance a $ 3,864 million stand by credit to UK. The funds will be contributed by Belgium, Canada, West Germany, France, Japan, Netherland, Sweden, Switzerland and US. UK towards December end cut its bank rate from 14.5 to 14.15 per cent after having brought it down from the October rate of 15 per cent. The government is also working out a plan to neutralise the sterling balances as reported in the last issue p 17. The liquidity of these balances will be removed but the inflationary results of the drop in the value of sterling which means a rate of inflation of 14 to 15 per cent will continue for at least a further five years. Meanwhile UK's balance of payments for the third quarter of the year did well, thanks to the influx of foreign shoppers and tourists. Invisibles were at a record £ 569 millions, so that the deficit on current account was only £ 673 million (£ 100 million less than anticipated) and the visible trade balance worse by £ 200 million. This deficit was $ 2,688 million for the first nine months and explains in part the large IMF loan. The fourth development was the series of revaluations which were made in the Australian and New Zealand dollars. In the case of the Australian dollar, three revaluations in December by its Reserve Bank changed the devaluation from 17.5 per cent (see last issue p 17) to 13 per cent. New Zealand followed suit revaluing its dollar exchange rate by 2 per cent.

OPEC : As noted earlier, the 13 nation organisation of Petroleum Exporting Countries meeting in December decided to raise the price of crude. 11 members will be raising its price from $ 11.51 a barrel to $ 12.70 (a 10 per cent rise) from 1 January and to $ 13.30 (a further 5 per cent) from 1 July. Saudi Arabia and UAE did not join in this decision and announced that its price will be raised by 5 per cent from the first of January. The majority price increase was justified as an offset to the inflation rate of 26 per cent on their imports since October 1975 of these countries. The effect of this double international pricing of crude on the market will have to be studied and no forecast can be made now as to the final consequences. For Japan a 10 per cent increase will mean an additional $ 27 billion to its annual oil import bill. EEC countries expect that their oil imports will cost $ 4.9 billions more. The hardest hit will be the non-oil producing developing countries and to cushion the impact, the OPEC ministers decided to step up their aid to other countries. The price rise will also affect the return to normalcy of the economies of the developed countries, strengthening the

forces of inflation and unemployment and resulting in recessionary conditions.

International Economic Order and CIEC : The postponement of the meeting of ministers of the Conference of International Economic Co-operation from the originally planned mid December date referred to in the last issue p 18, because of the deadlock and disagreement on the questions of debt, trade, commodity buffers and prices was the subject of prolonged discussion in the U.N. General Assembly in December. A resolution expressing deep concern at the slow pace of progress in implementing the New International Economic Order and call to the developed countries to fulfil the short falls in the implementation of previous resolutions, including the 0.7 per cent ODA pledge was adapted, with the US voting against it because it does not accept the concept of the New Order nor the 0.7 per cent ODA pledge and seven other developed countries, Belgium, France, Japan, Italy, UK, West Germany and Israel abstained on it. In view of the deadlock at CIEC, there is a possibility that the General Assembly of the UN will reconvene at the end of January after the new US President is installed to attempt to arrive at agreed decisions on the important issues of trade, aid, debt and commodity prices. UNIDO in the meanwhile is exploring further Comecon aid to the developing countries. The International Investment Bank of Moscow has expressed its desire to collaborate with UNIDO in promoting industrial development in the developing countries. In order to reach the target of increasing their industrial sector from 7 to 25 per cent of world industry by 2000 AD, the developing countries need $ 800 billion in foreign exchange over the next 25 years. An OECD study of the World Economy issued in December shows that the Third World's 40 poorest countries have been hardest hit by the international recession over the past year due to their inability to finance their trade deficits. The sharp increase in the economic disparity among the developing countries and the bleak prospects for the lower income countries for the rest of the decade call for special action programmes. In this context it expects that the CIEC discussions will provide some practical solutions, but such arrangements are not a once for all decision but those which must be continually reviewed and acted upon. It recommends a sustained effort in adjusting national economic policies to assure non-inflationary growth in the industrial countries and in removing the blocks to the growth of developing countries including a longer ODA.

IFAD : 91 countries pledged a total sum exceeding $ 1,000 million for the International Fund for Agricultural Development which is to aid increased food production and improved nutritional levels in the poorest countries. The deadlock over the last $ 31 millon contribution was resolved by OPEC and industrial nations agreeing to contribute 50 per cent each of this residue, with Saudi Arabia and Venezuela providing the OPEC share and Sweden, Holland, Canada, West Germany, Japan, Belgium and Switzerland and pro-rating among themselves the other 50 per cent. Thus the IFAD resources will comprise $ 567 million from OECD countries, $ 435.5 from OPEC countries and $ 9 million in convertible currencies from all developing countries. About $ 350 million in loans and grants will go to African Satel countries, South Asia and Bangla Desh which are the main food deficit countries. IFAD will be

repleneshed every two and half years and will be one more international effort at boosting food stocks and food output and assuring proper distribution of food assistance to food deficit countries.

World Food: World food supplies were more plentiful in 1976 than in the past two years. On this all international authorities, FAO and IWC as well as national authorities are agreed. FAO estimates world food production increases this year at 1-2 per cent and in the 45 poorest countries food output was good. IWC estimates that world grain output at 409 million tonnes which gives 100 kg. for every person in the world population of 4 billion. According to the British Commonwealth Secretariat, rice production has increased from 69.3 million tonnes in 1949 to 227 million tonnes in 1976, including China which produced 113 million tonnes. In EEC huge surpluses have built up of meat, dairy products and wine. IWC's estimate was increased by 10 million tonnes in December over November because of the Soviet Union's good crop of 100 million tonnes (against 1975's 66.1 million tonnes), the total Soviet grain output being 220 million tonnes. So too Argentina's crop is at a record 12 million tonnes (4 million tonnes over last year) and Canada's 23.6 million tonnes compared to last year's 17.1 million tonnes. FAO, however, points out that the longer term trend in food production in developing countries are not satisfactory in relation to the need to improve nutritional levels. Also cereal stocks needed to feed the world at a time of bad harvests had increased only to 13 per cent of the amount consumed every year and were still 35 to 45 million tonnes below target. There is need to set up a world net work of food stocks as soon as possible. The UN in a study on the future of the world economy also projects the need to treble or even quadruple world agricultural production by 2000 AD compared to 1970, by increasing the arable land under cultivation in the developing countries by 20 per cent and by doubling or trebling per hectare land productivity in these countries. While population growth rates will fall in developing countries and reach stability after 2,075, there will be a 60 per cent increase in their population by 2000 AD and it is to support this increased population that it projects that the total amount of arable land in Australia, New Zealand, Asia, Africa and Latin America will be 229 million hectares by 2000 AD. In addition to requisite Public and Land Policies, the doubling of per hectare productivity will require inputs, irrigation, fertilisers, farm machinery etc.—$ 60 billion by that time. In the International Order this will call for: a faster change in primary commodity prices vis a vis manufacturing prices, an increase in the share of the developing countries of world exports of manufactured goods, changes in flows of capital investments and liberalised aid and trade policies.

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II Agricultural Development

Paddy and Food Crops:

As noted earlier, the good November and December rains have benefitted the samba crop and paddy cultivation, with tank irrigation underway all over the State. An intensive navarai campaign has been launched to make up the kharif short fall. With a favourable fertiliser supply position, adequate water resources and the intensive cultivation under way, estimates are that this year's rice production may be near 50 lakh tonnes, compared to last year's 59 lakh tonnes. With the emphasis now being laid on extended millet and pulses farming, the total crop output for this year should be only marginally short of last year's 80 lakh tonnes. In addition to the second high yielding millets and pulses crop project, there is also a vegetable compaign in garden lands under way. The Agricultural Directorate is expanding its horticultural wing to ensure wider and better cultivation of vegetables, fruits and flowers. Three horticultural units will function under the wing for the north in Cuddalore, for south at Dindigul and for the west at Salem. A Rs. 3.22 lakh scheme to improve the Zonal groundnut farm at Vadagarai in Tirunelveli district is under execution. The 76.53 acres farm is being provided with irrigation and power tiller and tractor facilities to increase groundnut production in both the kharif and rabi seasons, as well as develop seed farms for producing groundnut seeds of quality needed by the farmers. In the Coimbatore region the November/December rains have led to a change in the crop strategy which was based on the scanty South West monsoon. After the good North East monsoon, water has been released from the lower Bhavani, Amaravathi and Udumalpet canals and so now 1.30 lakh acres have been brought under improved groundnut varieties, TMV-2, TMV-9 and Pol-2. 40,000 acres under sunflower and 15,500 acres under TMV gingelly. Also 24,474 acres are being brought under cholam CSH-5 and Koilpatti Tall, 32,388 acres under high yielding ragi, CO-7, CO-10, 34,172 acres under hybrid cumbu, KM-1, KM-2 and 96,130 acres under hybrid maize. 40 acres are under Ganga and Deccan pulses. The programme is backed by a credit of Rs. 4 crores to small and medium farmers and the door delivery of the inputs, seeds, fertilisers and pesticides. From this part of the farm campaign, 1.2 lakh tonnes of oil seeds and 1.5 lakh tonnes of millets will be produced.

Research Results:

In December, the Tamil Nadu Agricultural University released a new rice variety, CO-40, which has a yield potential of 7.5 tonnes per acre and an average of 6 tonnes, is of 165-175 days duration and resistant to stemborer, bacterial leaf blight and blast. It will replace currently used CO-25 in Thanjavur and other districts in the samba, thaladi and pishanam seasons. Another rice variety which is still at the demonstration farm stage in C-4407 which conserves all the qualities of mashuri—fine grain, short duration, heavy yielding, resistant to blast as well as being non-lodging and non-germinating mature growth. This latter quality is a must in areas like the Cauvery or Krishna valley which are exposed to floods in the former and cyclone in the latter case. As noted earlier, research on plant growth has

indicated the possibilities of controlling nematodes at the root stage, in the case of tobacco, tomato, using foliar spray after innoculating the plant to counter pest manifestation. Similarly research on the biological control of gall formation caused by bacteria is under way, which would be of particular use for plants like grape vines. Research has also resulted in the Indian Institute of Science developing a new hybrid variety of tomato with a high level of vitamin A content. This variety can now be mass grown and can be used by the poor sector to prevent blindness caused by lack of vitamin A. In sugar cane, the Department released in December a new short duration, sucrose rice variety CO-C 1671 which can be harvested in 8 months and yields 30 tonnes per acre. In fact this particular variety was tried out in Kallakurichi Co-operative Sugar Factory area and was ready for harvesting in six to seven months unlike the traditional CO-568 which needed 10 months, responded well to split fertiliser applications and did not have secondary growth. It had higher growth, girth and individual cane growth and better in ratoon with 56.7 tonnes. Its sugar yield is 14.3 per cent in plan and 15.4 per cent in ratoon, being nearly double that of traditional varieties The timing of planting (late February) and harvesting (October) is important to prevent plinth development and tendency to lodging. CO-671 will soon become the high yielding variety used by sugar cane planters in the State.

Coconut :

The State stands first in the average per hectare yield of coconuts at 8,765 per hectare, followed by Lakshadweep at 7,500 and Kerala at 5,408 per hectare. But for the country as a whole coconut productivity has been declining. While the area of coconut growing has increased from 5.96 lakh hectares in 1949-50 to 11.1 lakh hectares today, the yield has declined from 5,785 nuts to 5,344 in 1974-75. There is therefore an urgent need for improving the yield per hectare through more intensified R and D but equally an assured and speedy transfer of the research and management findings from the research farm to the coconut farmer. This transfer should include filling in the gaps in technology soil health, correcting improper water management, in adequate plant protection, poor post harvest technology as well removing constraints such as lack of credit, deficiencies in input supply, uncertain market and prices and lack of the necessary institutional infrastructure. The immediate aim of the research and extension programme should be to raise the individual grower's yield to the State average. At a world level, coconut contributes 3 million tonnes per annum to the 29 million tonnes of edible vegetable oil and so is a decisive element in the edible oil supply frame. The decline in the trade position of cocount in this world edible oil market has been traced to (a) failure to replant with superior material, (b) reluctance to use fertilisers, (c) market competition by synthetic detergents and (d) alternative oil crops as palm oil or soya. These 4 elements must be takan into account in establishing a coconut growth policy and strategy by the State.

Seri-culture and Sugar :

The need for restructuring sericulture farming in light of the possibilities in the State and international developments in this area is generally recognised. The target is to double the production of the quantity of mulberry leaves per acre which would also lower production cost. Also

cocoon production should be increased to 350-400 kg. per acre. This requires further basic and applied research in seri-genetics, physiology, pathology, mulberry breeding and agronomy. This is necessary to back up the Rs. 4 crores seri-culture scheme in Dharmapuri District, if it is to achieve the target of 2 lakh additional kg. by the end of the Plan period. On the sugarcane front, the State government took steps in December to improve the price of cane and income of cane farmers. For this purpose it has suggested to the Union government that levy prices should be raised and a part of the sugar exports earnings should be distributed among cane growers to give cane a better price. This is an urgent issue for the survival and expansion of cane farming and for the payment of an adequate wage to the sugarcane farm labourers.

Census and Credit :

The State government launched in December the agricultural census with 1976-77 as the reference year as part of the all India programme. From July 1977, karnams in 3,343 selected revenue villages will collect from every resident farmer details concerning the location, area, crop, tenancy status, and irrigation for the farm. This will make possible the establishments of accurate and relatively complete statistics. Following the legislation on co-operative credit societies adopted by the December meeting of the Lok Sabha consultative committee, compulsory consolidation and amalgamation of societies got under way. Under the new procedure the long delays in ensuring amalgamation of unviable societies will be replaced by a speedier and more effective procedure to eliminate unviable and dormant societies. Also the Co-operative Land Development Act has been amended to permit the flotation of rural debentures by the State against its guarantee and not against the mortgages of the society. This will also enable the agricultural and Refinance and Development Corporation to subsidise the programme of energising of wells by the State Electricity Board.

Animal Husbandry :

The government started in December the centrally sponsored special animal husbandry scheme at a cost of Rs. 4.552 crores spread over 3 years. For this year Rs. 1.37 crores are being spent in Madurai, Coimbatore, Salem, North Arcot, South Arcot and Chingleput districts to establish the projects among small and marginal farmers. Under the scheme 25,000 cross bred heifers and 6,000 sheep and 12,000 poultry units are being established. In the first project of cross bred heifer, small farmers receive a 50 per cent subsidy, marginal farmers and agricultural labourers $66\frac{2}{3}$ subsidy, in the second and third project of sheep and poultry units, small farmers will get a 25 per cent subsidy and marginal farmers and agricultural labourers a $33\frac{1}{3}$ subsidy on investment. The implementing authority for the cross bred heifer project will be the Tamil Nadu Dairy Development Corporation and for the other two projects, sheep and poultry, the Animal Husbandry Department and the Tamil Nadu Poultry Development Corporation. These animal husbandry projects are to come under the country's cattle assurance schemes from January 1,1977. To date in the State in 10 months of 1975, there was a four fold increase in cattle insurance under which 4,934 cattle were insured for a premium of Rs. 2,90,760, but there is a long way to go with 135 lakh cattle—most of them of the *Chani Madu* variety. For the country as a whole by October 1976, 9,551 heads of cattle were insured by the

General Insurance Corporation of India for a premium of Rs. 9,23,924—which was a fifth of the country's target. From January 1977 the insurance scheme is being popularised. SFDAs, MFALs and DPAPs will subside cattle insurance to the extent of $\frac{3}{4}$ per cent, the bank financing the animal purchase paying $\frac{3}{4}$ per cent and the farmer or agricultural labourer, one per cent—making a total of $2\frac{1}{2}$ per cent on the premium. Where the bank does not finance the subsidy, the project authorities will pay $1\frac{1}{2}$ per cent and the farmer or labourer one per cent. All cattle schemes under the programme of Rs. 1.37 crores referred to above will have to be insured by the GIC, which will also cover breeding and calving risks. Each of the 4 subsidiaries of GIC has been assigned an area of operation, rate of premium, age of animal and related matters. In project areas, insurance protection is given at the rate of 4 per cent of the value of the animal against accidental death of cattle. Disability in producing milk is also covered on payment of a small extra premium. Cattle Insurance should act as a boost to animal husbandry in the State.

Tea :

During the period April to October 1976, tea exports amounted to Rs. 1.40 crores and despite the set back in September/October tea production in the North and the fall in London tea prices, it is expected that the year's export target of Rs. 240 crores will be attained. In the North East region, a spell of drought, the absence of late rains and the early advent of winter led to the September/October fall in production to 40 million kg compared to the 49 million kg. produced in these months in 1975. Till October, North India produced 354.8 million kgs. and the South produced 90.5 million kgs., which was 25 million kgs. more than the previous year. With the November rains, tea production in the South improved, so that for all India, production will be near 500 million kg. for the year. Sri Lanka has a short fall of 15 million kg. this year compared to last year at 160.7 million kg India's tea gardens extend over 3,62,000 hectares and should increase by 5,000 hectares a year. The Tea Board is planning a replantation subsidy of Rs. 5,000 to Rs. 8,000 per hectare and this will need to be increased and speeded up to match the aging of tea bushes.

Coffee :

Negotiations are underway among coffee producing countries — Brazil, Colombia, El Salvadar, Mexico, Angolo and Uganda for agreement on the level of coffee production for the next 3 years in view of the increase in the coffee crop expected in those years and the prospects of over production and a fall in prices. Simultaneously agreements are also being negotiated with the US and the East European Countries with regard to prices.

Rubber:

Despite the decision of the Union government to export the entire surplus rubber production, December saw a continuing fall in rubber prices in the country from Rs. 610 per quintal in November to Rs. 585 per quintal in December. Small growers have begun unloading their stocks and in the absence of increased offtake by the manufacturers, prices have been declining. The Kerala Rubber Marketing Federation entered the market actively to purchase rubber for export on the basis of an RBI loan of Rs. 4 crores.

Also the National Co-operative Development Corporation has provided Rs. 85 Lakhs by way of margin money. UPASI has itself made arrangements to export 4,000 tonnes of rubber before the end of December. STC reports that it has completed purchase of 11,000 tonnes and has exported 5,000 tonnes by mid December. The real solution to the rubber market crisis is the revival of the tyre and tube industry in the country.

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III. Industrial Development

Salem Steel :

There is still no movement towards a decision on starting on the equipment side of the Salem Steel Plant. The Union Planning Commission has before it the report of the special group it constituted on the project and is waiting for the recommendations on a phased programme from SAIL. The mechanical and electrical instruments for the major and auxiliary equipment needed by the plant have been established by the consulting engineers. The Rs. 3 crores allocated for the project this year has been spent on completing the infrastructure at the site. Of the Fifth Plan allocation to the project of Rs. 39.53 crores, Rs. 14.63 have been released and spent in the first 3 years. Now approval of Rs. 48 crores is needed for the first phase of equipment for the cold steel plant.

Neyveli :

Production in Neyveli for the first 8 months, April to November was good, power generation was 1,500 million units against the year's target of 2,170 million units. Urea was 54,000 tonnes against the annual target of 90,000 tonnes. Leco was 29,000 tonnes against the year's target of 45,200 tonnes. On this basis, the Corporation has decided to grant a general production bonus to all its employees on the fulfilment of the year's targets. While the production line workers will be paid an incentive in addition to the regular quarterly incentive, employees in non-production lines will be paid the bonus in relation to the expeditious manner in which they dispose of the tasks periodically assigned to them. NLC reports that for the first time in past years it will be making a profit of Rs. 4 crores this year, as against the loss of Rs. 14 crores in 1972-73, Rs. 11.5 crores in 1974-75 and Rs. 4 crores in 1975-76. Thus the efforts made over the past 4 years to increase productivity, to introduce management techniques and use the emergency to bring a sense of discipline have finally paid off in the profits that will be realised this year which in turn was the cummulative effect of increase in production of all the NLC units over the past 4 years.

Small Industries Survey :

The National Census of Small Industries conducted in 1973 and whose main con-

clusions were reported in Vol VI pp 373 and 374, showed that there were 16,002 small units working in Tamil Nadu in 1973 and by 1976 the number increased to 40,000. But the number of working units were 20,000 and even so the State headed the country in small industry development. To small units all over the country produced 2,400 units, Tamil Nadu alone producing 1,200, they accounted for an investment of Rs. 176 crores and output of Rs. 32.2 crores in 1972. The survey also shows that the engineering units come first with 5,492 units producing Rs. 88 crores of goods, followed by leather producing Rs. 55 crores and chemical engineering producing Rs. 42 crores. It refers to the desirability of units demanding high investment and technology like leather, mineral products, base metals and alloys, being located where their raw materials are available. The survey shows that Coimbatore and Madras districts have the largest number and variety of industries with an output of Rs. 65.2 crores and Rs. 53.66 crores respectively. On the other side, Salem, Tirunelveli, Tiruchi, South Arcot, Kanyakumari, Thanjavur, Dharmapuri and the Nilgiris fall below the average level of district production and should be the areas where small industries should be further promoted. The survey also states that in all industries—large, medium and small—in the State capacity utilisation was only 50 to 70 per cent and further utilisation of capacity was not attractive to the entrepreneur as optimum profitability or the rate of return fell with fuller capacity use. But the social cost of this is serious, and the institutional infrastructure and financing policies, should be so devised as to correct this and the unbalanced development that has taken place. On the whole, the survey points that small industries are doing better in sales than large and medium industries in the State and this could be further improved if institutional finance were made more adequate to them. This will also promote more competitive functioning in small industries. It also recommends more functional industrial estates and counselling and assistance of multi-institutional character in Madras and Coimbatore—the centres of industrial concentration.

BHEL and Madras Fertilisers:

BHEL reports execution of Rs. 19 crores worth of orders from Malaysia. It secured 3 orders in succession for power boilers and a second order for supply of instrumentation. In December, Madras Fertiliser's new process steam boiler was commissioned for use in the steam/naphtha reformer in the Madras Fertiliser's ammonia plant. It will generate 40 tonnes of steam per hour and, using ammonia contaminated process condensate as feed water, will avoid an important pollution source from the factory. The new process will help water conservation, recover significant heat energy, reduce the need to demineralise an equivalent quantity of raw water and save operation costs because of reduced use of chemicals. The process designing and engineering were undertaken by MFL engineers. The process will contribute new and important knowledge to process technology to ammonia based fertiliser plants in the country.

TIIC and Nationalised Banks:

The State government in December increased its share in the equity base of the Tamil Nadu Industrial Investment Corporation (TIIC) by Rs. 1.25 crores, to be matched by an equal amount by IDBI. The Corporation in its turn has liberalised

the terms of financial assistance to small scale industrial units and increased the loan ceiling for technician—entrepreneurs from Rs. 2 lakhs to Rs. 3 lakhs. Based on the merits of each, no margin would be insisted upon for a loan of Rs. two lakhs under the technocrat scheme and only a nominal margin of 10 per cent for loans above Rs. 2 lakhs. For units in backward areas repayment holiday for 3 to 4 years and for non-backward area units for 2 years will be allowed. At present the holiday is 1 to 2 years for all units. For project appraisal, the tecnocrat scheme will pay a small 0.25 per cent of the loan amount, with a minimum of Rs. 100 and Rs. 50 for each subsequent lakh of rupees, against the present rate of 0.5 per cent with a minimum of Rs. 125. For other units including World Bank cases, the fee has been cut to Rs. 250 from Rs. 500 on the first Rs. one lakh, and to Rs. 100 from Rs. 125 for the subsequent Rs. one lakh. The Corporation has set up a separate department for the promotion of small scale industries as part of the general drive in this direction. As noted earlier following an all India decision, a bankers committee has been set up in the State with IOB as the convener and 40 bankers as members to co-ordinate the developmental activities of the banks. The Committee is demarcating areas as between the different banks for implementing the different credit schemes for weaker sections through adoption of villages, slums and artisan schemes. There will also be uniformity in terms and conditions of credit in specified schemes and areas. The 15,000 villages in the State and the slums in the cities are being arranged by district and block for adoption by the banks. A sub-committee of 12 banks having the largest number of rural branches has been set up to prepare the ground for more active involvement of the banks in rural banking and housing finance. IOB will provide the committee with the secretariat and will be responsible for moving the government with regard to State action needed to facilitate the increased flow of credit to the weaker sections.

TIDCO:

As noted in the last issue p 25 TIDCO is setting up a Rs. 1.6 crore asbestos cement sheet plant at Alangulam with an annual capacity of 60,000 tonnes. On the basis of the letter of intent for the plant, Rs. one crore has been included for it in the 1977-78 budget. The Rs. 29 crores dry process cement plant at Ariyalur will be commissioned in September 1978. The machinery is beginning to arrive and will be set up in July. This plant will have a capacity of 5 lakh tonnes, while the Alangulam plant has a 4 lakh tonnes capacity. TIDCO has jointly with TANSI and a private firm from Bombay finalised plans for the manufacture of moulds for the plastics industry. The Rs. 1.31 crore project will produce plastic moulds with weights ranging from 4 to 15 tonnes and will manufacture Rs. 80 lakhs worth of plastic moulds per annum. TIDCO is also planning with TANSI the setting up of a tool room for manufacturing heavier types of tools mainly for medium and large industries.

Modern Rice Mills and Storage:

FCI is planning to start two more modern rice mills in addition to the 3 in Thanjavur and one in South Arcot. Each of the two mills will cost Rs. 60 lakhs and have a capacity of 1,500 tonnes. One will be set up at Erode and the other at Kanyakumari. In addition, FCI plans to expand its 17 lakh tonnes storage capacity (of which covered storage is only for 3.5

lakh tonnes) by constructing 25 mini godowns, each at a cost of Rs. 1.6 lakhs and a capacity of 640 tonnes. In addition it is constructing large godowns at Katpadi, Salem and Coimbatore, each with a capacity of 1.5 lakh tonnes.

SPIC:

SPIC announces a structural change with a representative of the Union government on its Board of direction, which increases the government representation from 4 to 5. During its first 17 months, it has incurred large losses and so its marketing and other departments are being reorganised along with an economy drive. The management is being entrusted to a civil servant which means that the government will have the dominant role in this joint sector undertaking. The company has had difficulties in marketing its urea, its stocks have been built up and its working days cut. Cumulatively this large and important fertiliser factory which was established with speed and a great deal of governmental finance and foreign collaboration (see Vol I No. 4 p 5, No. 8 p 7, and Vol II No. 3 p 11) has an accumulated loss of Rs. 18.25 crores, after setting aside Rs. 7.42 crores for depreciation. For 1974-75 the plant worked for a short period and suffered a loss of Rs. 1.27 before providing for depreciation. This makes its total debit balance Rs. 20.04 crores which has called for the rather drastic reorganisation of the plant.

Textiles :

SIMA reports that in October 1976, the 190 member mills produced 97,910 bales of cotton yarn of 180 kg. each, which is 18 per cent less than the normal production in these mills. Tamil Nadu's production was down by 19 per cent compared to 16.45 per cent in Andhra Pradesh, 18.5 per cent in Karnataka and 9.55 per cent in Kerala. Tamil Nadu mills had a 25 per cent power cut, Karnataka 40 per cent and none in Kerala and Andhra Pradesh. 6 mills did not work during October in Tamil Nadu and for most production was well below normal. Prices of cotton ruled high and so did yarn but cloth prices were stable as noted earlier. The shortfall in cotton production and availability due to adverse weather last year and the increased demand for cotton by the mills was a further destabilising factor. There is need for a long term policy of stable prices of cotton and yarn, increased cash flow from banks, transforming of spinning mills into composite ones, and modernisation and improved management for the textile sector to come out of this low trough.

BINNY:

Buckingham and Carnatic Mills (Binny) has suffered severe damage to its machinery, stocks and materials during the floods. Flood waters in the mill rose to 5 feet, damaged a major part of the machinery and swept away and spoilt raw materials and finished cloth. 6,000 motors out of 7,000 as well as transformer cables and switches were under water and completely damaged. The loss in raw materials, cotton, polyester fibre and yarn was Rs. 2.5 crores and finished goods, including bales of yarn ready for export, Rs. 1.5 crores. Machinery damage was Rs. 75 lakhs, particularly the spinning machines. The company which produces a daily average of 1.45 lakh square metres of cloth valued at Rs. 13 lakhs and has a labour force of 12,000 with a monthly wage bill of Rs. 75 lakhs has been completely immobilised since November 25. IDBI is visiting the mill in response to its request for financial aid of Rs. 4 crores,

or an interest free loan of Rs. 4 crores to tide over this disaster.

Handloom:

The Commissioner of Handlooms reports in December that the working of the scheme of controlled cloth production by the handloom sector has been good. The marketing of the cloth is proceeding smoothly and the question of increasing the subsidy of Rs. one per square metre under study. Also the issue of whether the Southern States can meet the target of 50 per cent of controlled cloth production is under review. A tie up arrangement with the mills to provide quality yarn to expcrt oriented handloom units has been worked out. As against the requirement of 4,000 bales per month, the co-operative, nationalised and few other mills have made offers of 20,000 bales. The expcrt target for handlooms for the year has been revised from Rs. 168 crores to Rs. 155 crores. The over stocking of ready-made garments in the US ware houses (see last issue p 27) was due to the over buying by US firms, not because of sub-standard quality, he pointed out. This year working capital assistance through RBI to the handloom sector will reach Rs. 40 crores and government Assistance Rs. 15 crores. An EEC delegation is visiting the country in January to negotiate handloom exports to the Community. To further expand handloom exports, the Union government has made changes in the important policy and included handloom fabrics, made up articles and garments and embroidered articles in the select list of export products, so that they will get export house certificates which will enable them to obtain import replenishment licenses without having to export Rs. 50 lakhs per annum as in the case of non-handloom units. The Union government has once more reiterated the need to bring at least 60 per cent of the handlooms under the co-operative sector effectively. The Southern States are reducing this target but the effective coverege even in Tamil Nadu is less than 30 per cent and this must be corrected, particularly as these states account for 90 per cent of the RBI credit and Tamil Nadu and Andhra 75 per cent of that total.

Leather :

The total exports of all types of finished leather and leather goods for the period April to November was Rs. 204.98 lakhs, an increase of 70 per cent (Rs. 120.25 lakhs) over the same period in 1975. Foot-wear exports in particular rose by 265 per cent, finished leather by 177 per cent, leather foot-wear by 88 per cent and leather goods by 65 per cent. The Union government has under consideration the development of a policy for the healthy and balanced development of the leather industry, and its composing units in the DGTD, small scale and the unorganised sector. DGTD units have grown very fast and small units very slowly—the farmer with a finishing capacity of 168.60 lakh pieces of skins and the latter 70 lakh pieces of skins. The blanket permission to convert to finished leather given to large units will be modified and small units given incentives for such conversion. However against the plan target of 500 million pairs of foot-wear, the actual achievement is low and Development Council has proposed adding 25 million pairs to the capacity of large units and 75 million to the small scale sector. Also DGTD feels that present obligation to export 75 per cent of production by the leather manufacturing units is high and should be reduced to

50 per cent. The State government has requested the Union government to arrange for concessional finance for the leather industry, (a) to enable the small tanners to improve their facilities for tanning and effluent treatment, (b) to help large units convert their production to finished leather and leather goods and (c) to enable the State Leather Corporation to set up facilities for finishing. There is also need for funds for increasing training facilities for producing persons at the diploma and technician level, which is in short supply. Also the State has suggested to the Union government that there should be free movement of hides and skins in the country as the State gets 80 per cent of its supply from outside the State. In this regard, the small foot-wear manufacturers should be organised in co-operative so that the State Leather Corporation can help them in marketing both in regard to supply and their products.

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IV Education, Science and Health

Educational Reform:

December is the traditional month for Annual Conference of the various professional associations including those of teachers. The All India Education Conference organised by the All India Federation of Educational Associations meeting in New Delhi at the end of December emphasised the role of teachers as agents of social change, emphasised the urgency of implementing the new pattern of education and rationalising the pay scales and ensuring minimum amenities of teachers. The All India Basic Education Conference meeting in Sevapuri early in December approved the new pattern of Education and recommended that secondary education should be made a productive and society useful effort on Gandhian lines. Functional (and not examination oriented) learning should involve half the school time, devoted to productive work in the developmental activities of the region. Emphasising the importance of the medium of instruction at the secondary stage being the regional language, it was against the teaching of English on a compulsory basis from standard VI and in place recommended that there should be optionals involving learning of other languages. The Conference suggested 50 per cent vocationalisation of the plus 2 stage and practical work experience at the degree level. On the teaching of languages, the All India English Teachers' Conference meeting in late December in Powai, Bombay, referred to the importance of English for the development of science and technology and pleaded for a National Policy on languages. There is a national policy—called the 3 language formula—established by the Lok Sabha in its Educational policy resolution in 1968. The problem is that it is not being implemented faithfully by the States. The All India Secondary Teachers' Federation

meeting at the end of December in Cochin offered its support for the new pattern of education, asked for orientation and training of teachers in the new pattern and the establishment of the plus 2 stage in schools. The Central Board of Secondary Education has decided that the semester system will be introduced at the plus 2 stage in its schools from the next academic year. 25 per cent of the time at this stage will be for a compulsory core course for all students, and for the vocational stream, 50 per cent of the time will be on practical training in industries, farms and other undertakings. The 2 year course will be divided into 4 semesters, with continuous internal evaluation and examinations at the end of the second and fourth semester to ensure inter-institutional comparability. The valuation will be on a seven- point scale and students will be encouraged to offer additional courses and award extra credits for performance in such courses. NCERT is organising ancillary service for primary school students and orientation programmes for teachers to enrich primary courses, increase enrolments and reduce drop-outs. Also non-formal education programmes are being organised for drop-outs to enable them to complete their education upto class VIII and then pursue further education. In addition to each State's programme of non-formal education for the 6-14 age-group, NCERT has launched pilot projects in 15 States including Tamil Nadu for model non-formal education centres, based on surveys of the socio-economic needs of the local community and with emphasis on multiple entry, upgraded classes, part time courses and functional education. It has also started 450 centres in 15 states for curriculum renewal and a massive primary teachers orientation programme. The Karnataka government has started 3 units for the manufacturing of the energy food for the mid-day meal to the pre-school and school children. The fund supplement will provide 15 to 20 grams of protein, and 600 calories to school-going children. It has been estimated that 25 tonnes of energy food would be needed to cover 2.5 lakh children in the 3 districts. The State Committee on unrecognised schools (see Vol VI pp 328, 463 and 593) has completed its work and is submitting its report in January. The problem presented by these schools is the need to regulate their fee collections and the maintenance of standards and teachers qualification, while allowing private efforts to cater to the educational needs of the pre-school and some school age children. The schools have formed the Tamil Nadu Nursery and Primary Schools Association with a membership of over 500. It is important that the discussion and decision on this import educational segment should be made on strictly educational lines. At the University level, the State government has increased and liberalised scholarships to scheduled castes/tribes students. They are to receive tuition fees as soon as they join an arts or science course or when transferring to a professional course at the start of the academic year. Similar provisions are made for their pursuing B.T., B.E., and BGL courses. The Union government announced in December the launching of a new National Service Volunteer Scheme somewhat along the lines of the Tamil Nadu Youth Corps started in 1972 (see Vol II No. 7 p 32.) The volunteers will be trained and paid a monthly stipend of Rs. 175 to work on projects organised by the Union or State governments or local or voluntary organisation, covering such fields as arousing awareness of their rights among the weaker sections of the community, family planning, immunisation, anti-malaria and anti-tuberculosis

campaigns, non-formal education and adult literacy, preschool programmes, physical education and rural sports, co-operatives, youth club and other specialised jobs related to the volunteer's education. The government has also extended the present NSS scheme to the plus 2 stage, with a target enrolment of 4 lakh students at this stage by April 1979. The Universities in UP have decided to work for 200 days cutting down holidays, complete the examinations by May 22, announce the results by June end and finalise all admissions by June 15. Each University is to run short term vocational courses and principals and teachers are to be transferred between colleges. For all the Universities, uniformity is to be ensured by observing 36 per cent as pass, 48 per cent as second division and 60 per cent as first division, and students failing in one subject for 2 consecutive terms not being admitted in the same subject. The teachers work load is fixed as 20 hours for a lecturer, 15 for a reader and 12 for professor. There will be central recruitment of teachers and provision for premature retirement. The M. Phil. course is to be initiated from 1977-78.

Satellite:

Satellite communication experiments to link remote areas in the country are to start in April/May, with time purchased from the Franco-German satellite "Symphonie." Communication links will be established both among Bombay, Delhi, Calcutta and Madras and with distant places like Leh, Aizawe, Imphal and Lakshadweep. Three stations, one each at Ambattur, Ahmedabad and New Delhi are being set up to relay communications from the satellite. The project is also economically viable and will break even in providing communications at over 2,500 Kms. It will function additionally to the existing and micro wave systems. TV programmes from this year originating in Delhi, Calcutta and Bombay can be viewed simultaneously as the 2 micro wave systems linking Delhi, Calcutta and Bombay are completed.

Science:

The Department of Science and Technology has set up a new science organ, the Ocean Science and Technology Agency, with the Prime Minister who is the Minister of Science and Technology as the head. The Agency will own and operate research vessels for multidisciplinary purposes and oceanographic studies, and plan, co-ordinate and subsidise work in oceanography, oceanic atmosphere, ocean water, ocean floor and ocean crust, as part of the study of physical, chemical, geological, biological and environment aspects of the oceans. It will ensure optimum utilisation of facilities and act as an inter-phase agency in collecting, storage, retrieval, processing, interpretation and dissemination of data on ocean science and technology. It will organise man power training and operate facilities for the study, exploration and exploitation and conservation of marine resources at the request of the agencies concerned. The agency fills a serious gap in the science facilities of the country. With the rising price of crude referred to earlier, the importance of intensified R and D in tribology with a simple direct aim of reducing imported crude from 20 per cent to 5 per cent is accepted by scientists. The major part of our industrial equipment and machinery is imported or made in the country with foreign collaboration, so that the lubrication requirements of the country are determined by the foreign manufacturers in collusion

with international oil majors. Hence the importance of both developing our own skills in machinery design and fabrication and R and D in order to ensure lubricating oil conservation and economy. The growing number of centres of industrial tribology in the country have this specific task, ICAR has announced in December the setting up of a fisheries research and training complex at Dhaubi near Bhubaneswar. It will improve techniques for fresh water fish culture, serve as a centre for crop live stock fish integration, conduct research on the collection and use of water hyacinth particularly as cattle feed. Similarly research on prawn culture of the Central Marine Fisheries Research Institute at Cochin and the Central Inland Fisheries Research Institute have achieved a break through in spawning prawns of the white prawn variety under laboratory conditions and in rearing larvae of the giant fresh water prawn. Further to the programme of integrated rural development (see Vol VI p 597), CSIR announced in December the adoption of Dharmapuri district to create an industrial culture to encourage new entrepreneurship and that it will be setting up a science and technology complex and polytechnology clinic in the district along lines of the Karimnagar experiment in Andhra Pradesh.

Health :

The Union government has set up a 7 member panel headed by M. Sivaraman of the Union Planning Commission to establish a scheme for a countrywide cadre of basic doctors. The panel will examine and propose of means of setting up the cadre, consisting of pragmatically trained personnel to extend health care and delivery, promote community hygiene and physical fitness in relation to people living in the rural area. The government is also outlining the steps to streamline the cancer control strategy in the country through the development of the 4 regional research therapy centres and the speedier distribution of cobalt units, so that every State is assured of the basic minimum needs to combat the disease. The State government announced in December its plan for the enforcement of the Drug Control Act in the manufacture sale and distribution of ayurvedic, siddha and unani preparations to which they have not been subject so far, resulting in some manufacturers mixing toxic chloral and other dangerous substance in their preparations and marketing them clandestinely. Also to ensure quality in drugs supplies, the Southern States are planning co-ordinated action on standards and against spurious drugs. On the family planning front, the Union minister for health and family planning announced in December that with $3\frac{1}{2}$ months still to go, 6 million sterilisations had been effected in the country against the year's target of 4.3 million, due to the fact that the programme is now being accepted in the rural areas. He also announced a new scheme of group incentives to make family planning a mass movement under which Rs. 40 lakhs are to be given as community awards annually to districts and panchayats. An award of Rs. 10,000 is to be given to one village panchayat in each of a 300 districts which has the highest coverage of eligible couples in all family planning methods, with a minimum of 100 sterilisations and coverage of 50 per cent of couples, the terminal methods being used by 40 per cent. Similarly an annual award of Rs. 10,000 is to be given to one district in each of the 4 zones in the country which has the highest percentage of coverage. Also population education

through formal and non-formal education channels is being diffused throughout the country, through inclusion of population values in the school and college curriculum and using teachers, pharmacists and voluntary agencies for a wider diffusion of population problems among the public. The ministry's population education and training cell is organising training for 40,000 teachers in 200 districts in Uttar Pradesh, Assam and Jammu & Kashmir, the Planning Council is training 90,000 registered pharmacists to act as advisers on family planning and as a retail depot for contraceptives and the Central Board of Workers Education is organising courses for workers in the organised sector on population education, family welfare and family planning. There is an air of optimism about the population dynamics of the country in both official and non-official circles at present.

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V. Employment

A report on the working of the scientists pool states that over the 18 years of its functioning, 11,654 scientists were selected as members of the pool and provided with employment. Of them, 10,479 were those with foreign qualifications and only 252 left the pool and went abroad. The pool has 3 groups, those with foreign qualifications, those with Indian qualifications but who have been abroad for training or advanced work and those with Indian qualifications—the last being restricted to 25 per cent of the total members. Of those selected from the IITs to the pool from abroad, 80 per cent were from Madras, 75 per cent from Delhi and 60 per cent from Kanpur, 55 per cent from Bombay and 50 per cent from Khargapur. Of those who went abroad, half had bachelors degree, a fourth masters and a fifth doctorates. An Asian Seminar for rural workers organisation organised by ILO in Delhi in December recommended that the rural poor should be organised in one organisation to resist the tremendous power and pressure of the rural elite and vested interests, and effective social and economic organisation should be developed by the organisation to provide the services urgently needed by the poor. In this, the education of the rural worker in his rights has a key role. The Khadi and Village Industries Commission reports that during 1975-76 it provided employment to 20 lakh persons. With a budget this year of Rs. 48 crores, it has a khadi scheme in one lakh villages and produces Rs. 200 crores of finished goods annually. The Union government reports that as at December 1976 over 60,000 bonded labourers were freed. Their rehabilitation is as urgent and needed a programme to which attention must now be turned as their release. The Union governmen prohibited strikes in the Electricity Board in the State, which includes generation, storage and transmission of electrical

energy and in Neyveli. It also issued in December an order under DISR making employment in Burn Standard, Salem, Magnesite, Salem and Dalmia Magnesite, Salem essential undertakings and prescribed minimum wages for their workers. The State government, while revising the minimum wages schedule for agricultural workers, has made it clear that the agricultural workers who are getting higher wages than the minimum will continue to receive such wages. The National Apex Body on Labour meeting in Delhi at the end of December has set up a standing committee consisting of Trade Union and Management representative to deal with problems arising out of lockouts and strikes in various industries in the country. It was pointed out that 80 per cent of mandays lost in 1976 was due to lockouts because of slackness in demand and recessionary conditions in some sectors. It was decided that the existing and future cases of lockouts will be referred to the standing committee for approval and unanimous decisions would be binding on all parties and cases of disagreement will be referred to the government for resolution.

* * * * * *

VI. Other Items

Art Exhibition :

During December there were two art exhibitions organised in the City, one by the US Consulate on paintings by a young United States Artist resident in Paris and the other by Hungarian Government on Industrial textiles. The US painting exhibition had all the colour and liveliness of modern art, following the great masters in Paris. The Hungarian exhibition was really an exhibition which showed that people's means of living are forms of art, that true art is peoples art. There was a variety of tapestries and hanging carpets from all over Hungery—both those done by artists and those by villagers as part of their means of employment. This coincidence of art and life was striking.

WUS and Tree Planting Committee:

The Executive Committee of the World University Service met in December and decided to approve the programme for raising funds by two special entertainments one in Madras and the other in Coimbatore. It also approved a rural development programme which WUS would be operating as part of the University programme of Integrated Rural Development. Also in December the State Committee on Tree Protection and Planting met under the Chairman of the Adviser. It reviewed the achievements in tree planting against the targets set for the State and for various sectors within the State and noted the good progress being made. It recommended various measures for the care and maintenance of

the plants so that their survival rate can be increased.

Committee on Indirect Taxation :

The Union government Committee on Indirect Taxation visited Madras to receive evidence from the economists, the government departments and the business community. Apart from suggestions to lighten excise duties on goods of mass consumption, the main discussion was on means of stream lining the plethora of indirect taxes—customs, excise, sales tax and octroi, if possible to collect them centrally and distribute them through the machinery of the Finance Commission. The other major issue was whether the Value Added Tax system can replace the excise and sales tax. The Committee has *received considerable evidence on all* these issues and will be submitting an interim report in time for the budget preparation for 1977-78.

Self-Employment of Graduates and Racing Conference:

*In December the Association of Self-*Employed Graduates was launched by the University Students Information Bureau. The first employment project was the setting up of milk kiosks all over the city by the graduates, with loan finance from the United Bank of India, the help of the Tamil Nadu Dairy Development Corporation and the Corporation of Madras. Under this project, 50 graduates are being employed in 32 kiosks. Also in December the State Committee on Racing met with the Asian Conference on Racing held in Madras and received evidence about the importance of racing for the country's defence, for horse breeding, for governmental revenue etc. from representatives of 20 countries who were attending the conference.

Adult Education—Training Course and IRD :

The University under the sponsorship of the University Grants Commission started on December 6, a 6 week course attended by 25 participants from 14 Universities on Adult Education as a University discipline. The course was intended to train University adult education teachers in their tasks and to establish the framework of the syllabus for the M.A. programme in adult education which the University is launching from the academic year 1977-78. The course was aided for the first 3 weeks by Prof. Roby Kydd, the General Secretary of the International Course of Adult *Education and Prof.* Fordham from the UK during the last 3 weeks. On December 10, the Indian Adult Education Association organised with the Minister of Finance and the Indian Council of Agricultural Research a meeting for the co-ordinators, State officials and district collectors from the 4 States of Kerala, Tamil Nadu, Uttar Pradesh and Assam where a national workshop is to be held in each State *during the coming months on* non-formal education activities within the programme of Integrated Rural Development in the selected districts. The Minister of Finance gave the Association and States clear guidance on what kind of education was necessary to support the science and technology programme and the *meeting* established plans for the 4 States to run the workshops where these programmes for each of them will be elaborated.

Modi Lecture and Southern Vice-Chancellors' Conference :

The Gulzar Mal Modi Science Foundation launched in December on Annual Science Lecture series. The first lecture was delivered by the Director of the Institute on the theme, science in the battle against poverty. The Southern Vice-Chancellors met in their Sixth Annual Conference at Kerala University in mid December and reviewed the Madras University programmes of administrative reforms and staff medical insurance and decided to adopt similar measures in other Universities. It noted the growing variations in the semesterised post-graduate and M. Phil. programmes between the 17 Southern Universities, and set up a four man committee of vice-chancellors to review these 2 programmes and suggest a common academic framework for them in the southern universities. It also requested the committee to examine the possibility of facilitating the transferability of staff between the Universities which would enable them to carry their accumulated benefits with them. It arranged for increased co-operation through the exchange of the publications of each university, use of the system of visiting professors and the setting up of a data bank at the ICSSR regional centre at Osmania University for storage and retrieval of data collected by research scholars.

Tamil Nadu Board of Continuing Education :

The Council of the Tamil Nadu Board of Continuing Education met in December and after reviewing the programme of the constituent agencies under way, decided to set up a Resource Centre on Non-formal Education to assess the government's large and growing programme of non-formal education. Accordingly the first meeting of the governing body of the Centre met in mid December, approved the 3 year budget of the Centre for 2 lakhs per annum, established as its priorities the development of curricula and teaching materials for the city's 42 non-formal education centres, the 200 centres in the districts of Coimbatore and Tiruchirapalli, and the 375 centres to be established in each of the blocks in the State. It approved the renting of the premises of the Association of Surgeons of India for locating its 3 departments on curricula, training and evaluation. The selection committee of the Centre met at the end of December and appointed 4 full-time and 4 part-time staff to man and run the Centre.

Indian Economic Association :

The 59th Conference of the Indian Economic Association with 400 economists and 5 past presidents met in mysore University on December 28, 29 & 30. Its discussions centre around Adam Smith's contributions, the industrial policy of the country and India's trade with the Soviet Union. The Current topic discussion was on the prospects for growth in the country. The first Huchappa memorial lecture on Value Added Tax by Prof. Lakdawalla was delivered during the conference. It requested that the next conference which was the 60th conference—its Diamond Jubilee—should be celebrated in Madras University in December 1977 and in Bombay University in 1978.

Common Wealth Scholarship and Board of Higher Secondary Education :

In December a preliminary screening of some 316 applicants for Commonwealth

scholarships in the Social Science and *English in the* UK *and Canada* was undertaken by the Committee constituted by the Minister of Education. Ultimately the Committee will be selecting 18 of the most academically qualified scholars for a two to three year research study leading to the Ph.D. degree. On December 31, 1976, the Board of Higher Secondary Education was inaugurated by the Governor who called for careful planning of the vocational courses to be agreed at this stage, so that it will equip the majority of the students for employment and self-employment. The problems faced by the University and the colleges as a result of dropping the PUC, the proper equipping of the school which will be the locale of the higher secondary course and the need to use the 2 years available to make the pattern in the State a pace setter and a model for the country were emphasised. The Board held its first meeting after the inauguration to plan the syllabi for the course.

University Events:

As noted in the last issue p 46, in response to the damage to the slums and households of the poor caused by the November 25-26 floods, the University took 3 actions. A number of student hostels were evacuated by the students doubling with their fellow hostellers and over 10,000 homeless persons were lodged, fed and clothed by the students; second 3,000 students went to work for 3 days, December 5-7 in 15 slums washing out the dirt and silt from the house, rebuilding the huts, laying roads and filling the Vyasarpadi tank. They also organised a fortnights camp, starting on December 24 to complete the work in filling out the Vyasarpadi tank which also damaged the Binny Mill as noted earlier. Third in response to the appeal launched by the Vice-Chancellor, some 400 students, teachers and University and Colleges members and others contributed Rs. 80,000 to the University Relief Fund which is being used for short term relief—providing those rendered homeless with mats and blankets, utensils and books, note-books and slates for the school children for Rs. 25,000, and the remaining Rs. 55,000 is to be used to rebuild one of the areas by reconstructing the houses, laying roads, arranging sanitation and other facilities running non-formal education and employment training programmes. On the 20th of December the Union Minister of Health and Family Planning inaugurated the post-graduate Institute of Basic Medical Sciences of the University which is the second one of its kind and which has been under planning for the past 10 years. It is part of a larger project for a Post-Graduate Medical Education Centre in Madras. The University organised an Inter-University Cultural Meet from December 24 to 31 in which some 200 students from 15 Universities participated. The mornings were used for discussions, seminars, and lectures on the manner in which the University can contribute to cultural development, economic and social progress, national integration and unity and in the afternoon

two dance or song performances were staged every day. The festival attained its objective of making students conscious of Indians cultural and richness and the importance of it becoming part of their learning. It was decided to make this an annual event to be organised by different universities hosting it in turn under the patronage of one of them. The Syndicate held its monthly meeting at the end of the month and made decisions on curricular reform under the semester system for the second year 1977-78.

January Development Seminar:

The paper for the January seminar, 'Tamil Nadu Economy 1975' by Father Devasia, Prof. and Head of Dept. of Economics, Loyola College, together with a summary of the discussion on the paper at the seminar on Friday January 28 under the Chairmanship of Mr. R. Venkatraman appears as first article.

Second Article:

A paper, "The University's role in Integrated Rural Development" appears as the second article.

TAMIL NADU ECONOMY– 1975-76

By

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INTRODUCTION

1. The purpose of this paper is to assess the main developments in Tamil Nadu's economy during the year 1975-76. The period covered by this study is not invariably the same in respect of all the sectors of the economy. In some cases, the period is the financial year 1975-76, and in other cases it is the calendar year 1975. This is due to the fact that I had to depend on data provided by official and non-official publications which referred to the financial year for certain sectors of the economy and to the calendar year for the other sectors. It was not possible to work out a uniform scheme.

2. Reliable sources of information on changes in Tamil Nadu's economy are certainly not abundant. I have depended heavily on the latest publication of the Finance Department of the State Government, entitled "Tamil Nadu - Economic Appraisal 1976" and on the monthly Bulletins of the Madras Institute of Developments Studies. I am particularly grateful to Mr. G. Chidambaram, Director of Evaluation and Applied Research, Government of Tamil Nadu, for providing information regarding developments subsequent to the publication of the Economic Appraisal 1976.

3. I have not attempted to cover all the sectors of the economy, but confined myself to Agriculture, Industry, Power, Labour and Employment and Prices. Besides, as we had recently at this Institute seminars on Production Trends, Small Scale Industries and Unemployment, I have avoided elaborate discussion of these subjects. I have tried to compare, wherever possible, the changes that have taken place in Tamil Nadu in 1973, 1974 and 1975 or in the corresponding financial years, 1973-74, 1974-75 and 1975-76. Some comparisons have been attempted also in respect or developments in the State and at the national level,

AGRICULTURE

4. Generally speaking, it may be correct to state that for Tamil Nadu's economy, 1973-74 was a normal year, 1974-75 an exceptionally bad year and 1975-76 a year of recovery. 1976-77 may turn out to be a good year. This seems to be particularly true of the agricultural sector. Compared with 1973-74, the year 1974-75 was characterised by

(i) decline in the area under cultivation ;

(ii) decline in the yield per hectare or productivity;

(iii) decline in the area irrigated by different sources of irrigation;

(iv) decline in the amount of fertilisers used;

(v) decline in the output of foodgrains and commercial crops.

5. Compared with 1974-75, the year 1975-76 was characterised by

(i) substantial increase in the area under cultivation;

(ii) increase in productivity;

(iii) increase in the area of irrigated land;

(iv) increase in the amount of fertilisers used;

(v) increase in the output of foodgrains and commercial crops.

6. Table I below gives data for area under cultivation and yield per hectare for the three years we have taken for comparison.

TABLE 1

AREA UNDER CULTIVATION AND YIELD PER HECTARE

Crops	Area (000 hectares) 1973-74	1974-75	1975-76	Yield (kg. per hectare) 1973-74	1974-75	1975-76
1. Rice	2,704	2,238	2,689	2,067	1,597	2,182
2. All cereals	4,402	3,940	4,553	1,617	1,188	1,666
3. Pulses	663	464	601	309	248	292
4. Total Foodgrains	5,065	4,404	5,154	1,446	1,089	1,506
5. Sugar cane (gur)	186	160	155	10,529	9,180	10,540
6. Groundnut (unshelled)	1,136	988	1,083	1,067	823	1,174
7. Cotton	299	249	261	203	187	251

Sources: Economic Appraisal 1976, p. 13 Director of Evaluation and Applied Research.

7. Table II below provides data for the output of foodgrain and some of the principal commercial crops for the year under consideration.

TABLE 2

Crops	Production (in '000 tonnes) 1973-74	1974-75	1975-76
1. Rice	5,589	3,575	5,867
2. All millets	1,530	1,107	1,718
3. Total cereals	7,119	4,682	7,585
4. Pulses	205	115	176
5. Total foodgrains (3+4)	7,325	4,797	7,761
6. Sugarcane (gur)	1,970	1,472	1,633
7. Groundnut	1,212	814	1,272
8. Cotton (bales) (in '000)	338	259	386

Sources : Economic Appraisal 1976, p. 11 Director of Evaluation and Applied Research.

8. Table III below gives data for the gross area of irrigated land in the three years under consideration.

TABLE 3

Crops	Irrigated area (in '000 Hectare) 1973-74	1974-75	1975-76
1. Paddy	2,485	2,028	
2. All cereals	2,813	2,354	
3. All food crops	3,211	2,696	
4. Sugarcane	186	160	
5. Cotton	109	100	
6. All crops—food and non-food	3,674	3,033	

Source: Economic Appraisal 1976: p. 96-7

9. Table IV below indicates the demand and supply of fertilisers (N, P and) (K) in the three years period.

TABLE 4

	Demand and Supply of Fertilisers 1973-74	1974-75	1975-76
Demand (in lakh tonnes)	4.96	5.25	6.00
Supply ,, ,,	3.37	2.44	2.83
Gap ,, ,,	1.59	2.81	3.17

Source : Ibid p. 17

10. The demand and supply of rural credit registered some variations during this period. Rural credit provided by institutional agencies like agricultural credit societies, land development banks, commercial banks and the Government declined from Rs. 169.76 crores in 1973-74 to Rs. 162.92 crores in 1974-75, indicating the decline in agricultural operations. In 1975-76 rural credit provided by these agencies was expected to rise substantially.

11. When one examines the reasons for the slump in agricultural activity in 1974-75 and the recovery in 1975-76, one is struck by the role played by the rainfall in agricultural operations. The dependence of agriculture on the rainfall seems to be very great and this is clear when we examine the trends in agricultural production and the rainfall over the past few years. The North-East Monsoon which normally brings in a rainfall of 449.7 mm was a great failure in 1974-75: it brought only 177.5 mm of rainfall. This should explain the major setback both in foodgrain output and commercial crop output suffered by the State in 1974-75. In the case of rice, the shortfall was 36 per cent. In the case of pulses the decline was 44 per cent. The decline in commercial crops was about 30 per cent. The rainfall in 1975-76 was fairly normal and this certainly helped recovery both in the production of commercial crops and foodgrains. Foodgrains output rose by 61.8 per cent from 47.97 lakh tonnes in 1974 75 to 77.61 lakh tonnes in 1975-76. The correlation between the rainfall and foodgrains output is brought out by the following table.

TABLE 5

DISTRIBUTION OF RAINFALL (in milli metres) AND FOODGRAIN OUTPUT ('000 tonnes)

Year	S.W. Monsoon (June-Sept)	N.E. Monsoon (Oct.-Dec)	Rest	Total	Foodgrain output
Normal	307.3	449.7	198.7	945.7	
1970-71	318.0	420.2	179.9	918.1	6,707
1971-72	322.5	488.5	147.8	968.8	6,884
1972-73	303.9	607.7	79.1	990.7	7,136
1973-74	332.7	406.7	102.4	841.8	7,289
1974-75	326.2	177.5	143.7	647.4	4,797
1975-76	420.3	337.9	100.2	858.4	7,761

Sources: Economic Appraisal 1976, p. 88; 98 Bulletin of the MIDS: February 1976, p. 107

12. This brief survey of the developments on the agricultural front in Tamil Nadu in recent years unmistakeably reveals the vulnerability of this primary sector of the economy. Agriculture which accounts for 41 per cent of the State income and provides means of living for 75 per cent of the population is

still heavily dependent on the rainfall. Hence arises the necessity of taking urgent and adequate steps to reduce this serious vulnerability of the agricultural sector. These steps include creation of greater water storage facilities, scientific water management, exploitation of ground water wherever possible, experiments in drip and sprinkler systems of irrigation, extension of dry farming and multiple cropping, further research on paddy strains and hybrid millets, crop variation and sequencing, etc. Some of these measures are already in the process of implementation, with varying degrees of success and others are under the consideration of the Government.

13. In December 1976, the Union Agriculture Ministry sanctioned a grant of Rs. 14 lakhs to Annamalai University for research on modern methods of rice cultivation and post-harvest technology. The Tamil Nadu Agriculture Department has recently decided to undertake a Rs. 12 lakh project for Operational Research on Water Management in Madurai district wiih a team of experts in engineering, agronomy, chemistry, agricultural economics, etc. The Tamil Nadu Planning Commission has recently drawn up an ambitious plan, involving an outlay of over Rs. 200 crores, for raising the production capabilities of the Cauvery Basin. This plan envisages modernisation of the old irrigation system, on-land farm shaping, water management, flood prevention, diversion and conservation of flood water, more effective and scientific exploitation of ground water sources, improvements in the drainage system to recover lands chronically or intermittantly submerged under water, judicious combination of river water, ground water, well water and rain water to enable multiple cropping, etc. These and other schemes when implemented will no doubt extend the area of cultivation by several thousands of acres and increase productivity substantially in the districts of Thanjavur, Tiruchirappalli and Pudukottai.

INDUSTRY

14. It is difficult to trace any definite trend in industrial production in Tamil Nadu in 1975. It was a year of irregular ups and downs for several industries and the net result was that the industrial sector just managed to maintain in 1975 the level of production it had reached in 1974. It is good to remember that the year 1974 was a year of recovery for most of the industries in Tamil Nadu from the low level of 1973.

15. The General Index of Industrial Production (base—1960:100) rose from 179.7 in 1973 to 196.7 in 1974 and remained at 196.6 in 1975. The setback on the agricultural front in 1974 had little effect on industrial production in 1974, but contributed to the creation of static conditions in the industrial sector in 1975. In 1974, industrial production rose by 9.5 per cent over the previous year; in 1975, it declined marginally by 0.1 per cent. But in the first quarter of 1976, there were already clear signs of progress on the industrial front. The General Index of Industrial Production rose from 225.2 in December 1975 to 241.2 in March 1976. This progress has continued on the industrial front, except in a few industries. The recovery of the agricultural sector in 1975, the Emergency declared in June 1975 and the consequent peace in industrial undertakings helped to accelerate growth in industries in 1976.

16. In 1975, decline in production was noticed in the following industries: motor vehicles, rubber products, bicycles, heavy chemicals, sugar, vanaspathi and sugar confectionery. Among the causes for decline in production in these industries were contraction in demand, rising cost of manufacture, power shortage, high prices of oil and shortage of raw materials. Table VI indicates changes in production for major industries in Tamil Nadu for 1973, 1974 and 1975.

TABLE 6

INDEX OF INDUSTRIAL PRODUCTION—TAMIL NADU

Base: 1960: 100

Industry	Weight	1973	1974	1975	% change over previous year 1974	1975
General Index	100	179.7	196.7	196.6	9.5	—0.1
1. Fertilisers	1.25	131.9	124.0	329.6	—6.0	165.8
2. Cement	4.00	202.4	210.0	228.7	3.8	8.9
3. Heavy Chemicals	1.39	177.6	203.0	189.9	14.3	—7.9
4. Electricity	16.41	298.8	316.6	335.7	6.0	6.0
5. Motor Vehicles	3.32	141.6	172.3	146.8	21.7	—14.8
6. Power Transformers	0.23	569.2	436.6	550.2	—23.3	26.0
7. Cotton Yarn	40.95	123.6	134.7	137.1	9.0	1.8
8. Rubber Products	2.77	255.4	363.2	308.9	42.2	—15.0
9. Sugar	3.82	379.5	453.2	348.5	19.4	—23.1
10. Tea	4.06	119.2	132.4	152.7	11.1	15.3
11. Hydrogenated Oil	0.41	63.5	69.8	54.1	9.9	—22.5
12. Cotton Woven goods	10.27	78.3	78.9	83.1	0.8	5.3
13. Safety Matches	1.85	191.3	240.5	243.0	25.7	1.0
14. Wheat products	0.43	130 4	99.2	145.1	—23.9	46.3
15. Motor Cycles	0.43	333.3	412.6	475.6	23.8	15.3
16. Bicycles	1.88	180.7	204.1	156.0	13.0	—23.6

Source : Economic Appraisal 1976, pp. 27-28

17 A few comments on some of these developments may be relevant in this context. Fertiliser production which had declined by 6 per cent in 1974 increased by 165.8 per cent in 1975. The decline in the motor vehicles production was not only a phenomenon of the State, but a national and even international phenomenon linked with oil price escalation. While the number of motor vehicles produced in Tamil Nadu declined from 9,417 in 1974 to 8,245 in 1975, the number of motor vehicles produced in India declined from 78,000 in 1974 to 62,000 in 1975.

The decline in tyre production is closely related to decline in the motor vehicles production. The decline in the output of vanaspathi which was 22.5 per cent in 1975 was due to the drought conditions of 1974-75. The sugar industry which had a record output of 4.2 lakh tonnes in 1974 declined by 23 per cent in 1975. This was due to the failure of the North-East Monsoon in October-December in 1974, the decline in the area under sugarcane cultivation and the diversion of sugarcane for jaggery manufacture. Towards the end of 1975, the situation changed for the better. With increased acreage under sugarcane cultivation, adequate rainfalls and better industrial relations, sugar output was expected to rise substantially in 1976. The Government has established the Tamil Nadu Sugar Corporation to run five new public sector sugar factories in Ramanathapuram, Tirunelveli, Thanjavur, Tiruchi and South Arcot Districts.

18. The years 1971, 1972 and 1973 were marked by recession in the cotton textiles industry, both in respect of yarn production and output of mill made cloth. There was a mild recovery in 1974 with 9 per cent increase in yarn output and 1.5 per cent increase in the output of mill made cloths. In 1975 the industry was able to improve its performance marginally—by 1.8 per cent in the case of yarn output and 5.3 per cent in the case of mill made cloth. This was due to certain measures taken by the Government such as exempting the weak mills from the obligation of producing controlled cloth, financial assistance to the mills managed by the National Textile Corporation and facilities for disposal of accumulated stocks. The Government of India has recently decided to assist five major industries, cotton textile, cement, jute, sugar and engineering, by providing substantial amount of long term loans at concessional rates of interest. The industrial Development Bank of India will operate the scheme of financial assistance to enable these industries to replace their outmoded and obsolescent machinery and equipment. The scheme of modernisation is expected to cost over Rs. 300 crores per year.

19. The National Textile Corporation has been pursuing a policy of modernisation of mills, cost control, quality control, product diversification and sales promotion. The Cotton Corporation of India has been given substantial financial assistance for making large scale purchase of cotton domestically and for importing foreign cotton and synthetic fibres in order to prevent unhealthy fluctuation in prices and ensure timely and adequate supply of this important raw material which forms nearly 50 per cent of the total cost of cloth. In spite of all these measures, the cotton textile industry continues to be in a state of chronic recession.

20. Table VII gives data for physical quantities of output for selected industries in Tamil Nadu in 1974 and 1975.

TABLE 7

INDUTRIAL PRODUCTION IN SELECT INDUSTRIES

Serial Number and Industry	1974	1975
1. Cotton Woven Piece Good (million metres)	145	153
2. Cotton Yarn (tonnes)	1,64,325	1,67,179
3. Cement ('000' tonnes)	2,361	2,571
4. Sugar ('000' tonnes)	420	323
5. Tea (tonnes)	49,934	57,604
6. Safety matches ('000' gross boxes)	49,867	50,406
7. Electricity Generated (MKWH)	7,100	7,528
8. Motor Vehicles (Nos)	9,417	8,245
9. Rubber Products (tyres) ('000' nos)	7,333	6,364
10. Bicycles ('000' nos.)	430	329
11. Wheat products ('000' tonnes)	94	138
12. Fertiliser ('000' tonnes)	212	548
13. Power Transformers ('000') (KVA)	914	1,151

Source: Economic Appraisal 1976, p. 29

ELECTRICITY

21. The total installed electricity generation capacity of the Tamil Nadu Electricity Board had remained static at 1,654 M.W. in 1973-74 and 1974-75. This increased to 1,764 M.W. in 1975-76 owing to the commencing of the Ennore Extension Scheme in December 1975. If we add to this the generation capacity of Neyveli, then Tamil Nadu ranks as number one among the States of India for installed capacity. Table VIII shows installed capacity in Tamil Nadu, excluding Neyveli.

TABLE 8

INSTALLED CAPACITY

	1969-70	1973-74	1974-75	1975-76
Hydro M.W.	1,029	1,224	1,224	1,224
Thermal M.W.	191	430	430	540
Total M.W.	1,220	1,654	1,654	1,764

Source : Economic Appraisal 1976, p. 39

22. Electricity generation in the State suffered a serious setback in 1973-74 owing to monsoon failure. The decline in the hydel sector generation was 10.7 per cent. In 1974-75 there was no substantial increase in power generation; it was the same as in 1972-73, although the needs had increased substantially. An accident at the Ennore Thermal Station also affected power generation seriously. All this led to a series of power cuts in 1974 and 1975. In the early months of 1975, the power cut in respect of certain industries was as high as 75 per cent. With the onset of the rains from June 1975, the power cut was gradually reduced and finally lifted. The shortage of power was partly met by purchase from Neyveli and Kerala. A notable feature of power generation in recent years is that the proportion of thermal power to total power generated has been steadily increasing from about 9 per cent in 1969-70 to 26 per cent in 1975-76. Table IX gives data for power generation and purchase in recent years.

TABLE 9

POWER GENERATION AND PURCHASE : (in million units)

	1969-70	1973-74	1974-75	1975-76
Hydro	2,869	3,702	3,827	4,405
Thermal, excluding Neyveli	265	1,171	1,249	1,317
Total	3,134	4,873	5,076	5,722
Purchase, including Neyveli	2,463	2,232	2,304	2,052
Total availability of power	5,597	7,105	7,380	7,774

Source : Economic Appraisal 1976, p. 41

23. Power consumption had remained static at about 5,300 million units in 1971-72, 1972-73 and 1973-74, but increased by 5.4 per cent in 1974-75 and by 7.2 per cent in 1975-76. Power consumption reached an all time high of 6,053 million units in 1975-76 largely due to increased consumption by the industrial sector which alone accounted for 50.3 per cent of the total consumption. Table X givas the pattern and amount of consumption in recent years.

TABLE 10

POWER CONSUMPTION AND PATTERN (in million units)

Class Utilisation.	1960-61	1973-74	1974-75	1975-76
Domestic	100 (5.7)	316 (5.9)	394 (7.0)	475 (7.8)
Commercial	91 (5.2)	315 (5.9)	382 (6.8)	402 (6.6)
Industrial	766 (43.4)	2,334 (43.6)	2,402 (42.5)	3,042 (50.3)
Public lighting	21 (1.2)	67 (1.2)	79 (1.4)	84 (1.4)
Irrigation	366 (20.7)	1,576 (29.5)	1,847 (32.7)	1,657 (27.4)
Traction	28 (1.6)	30 (0.5)	39 (0.7)	45 (0.7)
Miscellaneous	393 (22.2)	717 (13.4)	502 (8.9)	348 (5.8)
	1,865	5,355	5,645	6,053

Source : Economic Appraisal 1976, p 43.

(Figures in brakets indicate percentage of total consumption)

24. Rural electrification has made rapid progress in Tamil Nadu. By the end of 1975-76, about 97 per cent of its towns, villages and hamlets were already electrified. The total number of villages and hamlets electrified was 61,415. The Rural Electrification Corporation of the Government of India is undertaking the electrification of 2,425 villages and 457 Harijan Colonies in Tamil Nadu. By March 1975, Tamil Nadu had 7 lakhs of energised pumpsets, which accounted for 26.8 per cent of the total number of energised pumpsets in India.

25. The State Government has several projects for increasing power generation, both in the thermal and hydel sector, which are awaiting the approval of the Centtal Government. The completion of the Kalpakkam Nuclear Project the commissioning of Tuticorin Thermal Plant in 1978 and a second mine cut at Neyveli will go a long way in solving the power problem in the State. Neyveli which has been operating at low capacity and incurring loss for many years has begun to show signs of recovery. The latest proposal for the solution of the problem of power

shortage is the establishment of a superthermal station, for which both Tamil Nadu and Andhra Pradesh have put forward their claims. The cost of a superthermal power plant near Neyveli is estimated at Rs. 650 crores. There is no doubt that Inter-State understanding and co-operation are essential particularly in regard to the utilisation of river water and distribution of power.

PRICE SITUATION

26. At the national level, wholesale prices rose by 19.6 per cent in 1973, by 27.1 per cent in 1974, and by 1.5 per cent in 1975. In Tamil Nadu the rate of price increase was somewhat higher: it rose by 24.6 per cent in 1973, by 32.7 per cent in 1974, and by 11.5 per cent in 1975.

27. Taking the calendar year 1975 as a whole, we find that foodgrain prices rose by 17.1 per cent in Tamil Nadu, while at the national level the rise was only 0.63 per cent. The index number of wholesale prices for foodgrains remained high in the first half of 1975 and then declined during the second half of 1975. This decline in prices continued during the first half of 1976, but the trend reversed from July 1976.

28. In the case of commercial products, the rise in the wholesale prices was only 5.6 per cent in 1975. The price level was lower in the first half of 1975 than in the second half. From February 1976 to June 1976, the wholesale prices of commercial products continued to fall, but from July 1976 the trend has reversed.

29. The composite index of foodgrains and commercial products declined from 2,525 in January 1975 to 2,445 in December 1975, and to 1,909 in May 1976, with 1,939 as base year. From June 1976, prices began to rise again and the index rose to 2,395 in November 1976. The Government of India has lately decided to change its index base from 1960-61 to 1970-71. It is desirable that the State Government also should change its price index base from 1939 to 1970-71 so as to facilitate comparison between price movements at the State and the national level. Table XI gives changes in wholesale prices from January 1975 to November 1976.

TABLE 11

INDEX NUMBER OF WHOLESALE PRICES—TAMIL NADU (BASE: 21 AUGUST 1936: 100)

Months	Foodgrains group	Commercial products group	Composite index
January 1975	2,706	2,381	2,525
February ,,	2,765	2,334	2,524
March ,,	2,733	2,253	2,465
April ,,	2,625	2,299	2,443

Months		Foodgrains group	Commercial products group	Composite index
May	,,	2,726	2,339	2,510
June	,,	2,736	2,409	2,554
July	,,	2,670	2,351	2,492
August	,,	2,507	2,425	2,461
September	,,	2,411	2,483	2,451
October	,,	2,284	2,458	2,382
November	,,	2,117	2,457	2,307
December	,,	1,869	2,505	2,225
January	1976	1,729	2,419	2,113
February	,,	1,640	2,243	1,977
March	,,	1,539	2,215	1,917
April	,,	1,499	2,274	1,932
May	,,	1,506	2,227	1,909
June	,,	1,554	2,261	1,949
July	,,	1,768	2,474	2,163
August	,,	1,885	2,557	2,261
September	,,	1,891	2,687	2,336
October	,,	1,891	2,707	2,347
November	,,	1,997	2,710	2,395

Source : Economic Appraisal 1976, p. 51-52 Director of Evaluation and Applied Research.

30. Changes in consumer price index of industrial workers are indicative of changes in retail prices. A study of consumer price index of industrial workers in 7 centres of Tamil Nadu for the calendar year 1975 and 1976 (January to October) leads to several interesting conclusions. The centres covered by the study are Madras, Madurai, Coimbatore, Coonoor, Cuddalore, Tiruchi and Nagercoil. The details of the study are given in Appendix I and Appendix II. The main conclusions are the following:—

(i) Consumer prices were highest in Nagercoil and lowest in Coonoor; (ii) With the exception of Coonoor, consumer prices were higher in all the selected areas of Tamil Nadu than at the national level; (iii) Consumer prices moved up in the middle of the calendar year, mostly in June-July-August and then declined; (iv) From January 1975 to December 1975, consumer prices have declined in all the centres, the rate of decline varying from centre to centre: it was 7 per cent in Madras, 18.3 per cent in Madurai, 11.4 per cent in Coimbatore, 6.8 per cent in Coonoor, 7 per cent in Cuddalore, 9 per cent in Tiruchi and 6.1 per cent in Nagercoil; (v) Consumer prices continued to fall till May-June 1976, and then there was a mild increase in prices.

31. The Director of Statistics, Government of Tamil Nadu, has compiled statistics for price movements in the rural areas by selecting 8 representative centres in five Districts or zones. The study showed that in 1975 there were irregular upward and downward movements in prices during the first 9 months and then steady decline in the last quarter. The final result was that the price index for each of the five centres was considerably lower in December 1975 than in January 1975.

LABOUR AND EMPLOYMENT

32. For the Seminar on October 28, 1976, Dr. T. S. Venkataswamy had chosen for his subject "Employment in Tamil Nadu" (Refer Bulletin of the MIDS, November 1976). He has discussed with great competence the problems of employment and labour statistics, the extent and growth of employment in the organised sector both in Tamil Nadu and at the National level, the rate of growth of employment in the different States of India, the extent of unemployment as estimated by the Dantwala Committee, the Bhagawati Committee and the National Sample Surveys, the extent of unemployment as shown by the Employment Exchange, the N. S. S., the Economic Appraisals of the Government and publications like "Rural Employment in Tamil Nadu" by J. Viswanatha Murti and C. L. Narasimhan. Dr. Venkataswamy has also examined the various steps taken by the State Government to increase employment potential both in the rural and urban sector and has emphasised the role of agro-industries, small scale industries and labour-intensive techniques of cultivation in any plan for the solution of the problem of unemployment.

33. All this makes it unnecessary for me to discuss this subject on this occasion, although it forms an essential part of the survey of the development in Tamil Nadu's economy in 1975-76. I would only add here that the problem of unemployment and under-employment and the closely related problem of poverty are indeed formidable and baffling challenges which India has to meet with the utmost courage determination and resourcefulness. The extent of unemployment and under-employment at the State and the national level and the proportion of the poor in the total population have not yet been accurately assessed. Every month, the figures on the live registers of the Employment Exchanges are rising. The path to full employment and the war on poverty are going to be long and arduous.

APPENDIX—I

CONSUMER PRICE INDEX FOR INDUSTRIAL WORKERS—1975

(Base : 1960 = 100)

Centre	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
1. Madras	327	326	323	325	325	328	337	334	330	320	322	304	325
2. Madurai	371	372	356	354	359	362	364	363	363	339	313	303	352
3. Coimbatore	341	353	335	334	335	334	334	334	333	324	314	302	331
4. Coonoor	320	324	321	320	324	330	322	308	299	298	300	298	314
5. Cuddalore	323	324	323	326	339	335	343	335	323	315	317	300	325
6. Tiruchi	378	381	379	377	394	391	379	362	368	359	350	342	372
7. Nagercoil	438	404	385	385	389	414	402	386	371	373	373	361	390
8. All India	326	325	321	323	327	328	324	321	319	316	315	306	321

Ref : Economic Appraisal 1976. p. 53.

APPENDIX—II

CONSUMERS PRICE INDEX FOR INDUSTRIAL WORKERS—1976

(Base : 1960 = 100)

Centre	Jan.	Feb.	March	April	May	June	July	August	September	October
1. Madras	286	280	272	272	273	276	281	280	283	289
2. Madurai	301	295	280	280	284	287	291	293	295	303
3. Coimbatore	299	293	289	281	283	285	300	312	313	315
4. Coonoor	295	288	288	286	288	287	299	300	302	303
5. Cuddalore	291	287	281	277	274	268	283	290	292	299
6. Tiruchi	329	301	290	282	285	288	313	327	328	331
7. Nagercoil	363	340	305	311	319	314	315	317	339	341
8. All India	298	290	286	289	290	291	297	298	302	304

Source : Director of Evaluation and Applied Research.

Summary of Discussion

In the discussion of the paper at the Seminar held in the seminar room of the Institute on Friday 28th of January 1977, under the chairmanship of Mr. R. Venkataraman, Madras, the chairman in his prefatory observations stated that the paper conveyed a clear and cogent picture of the Tamil Nadu economy in 1976. Commenting on the sectoral profiles, he felt that while agriculture in the State depends on rainfall, this vulnerability could be reduced if water management was undertaken on scientific lines. For instance the canal irrigation which leads to extravagant use of water could be replaced by pumpsets. Industrial production in a year ahead is not likely to improve as the prospects for additional power availability is not bright in the immediate future. The disquieting country wide upward trend in prices is reflected in the State price levels. The prices of certain commodities, like oilseeds, can be controlled by improved production and better distribution. Improvement in cropping patterns should also be tried.

The author reviewing the performance of the State's economy stated that though the paper covered broadly the period 1975-76, the statistics for industry and prices are for the calendar year 1975, for power the financial year 1975-76 and for agriculture the fasli year from July 1975. The paper restricted itself to agricultural production, industry and prices and power generation and energy consumption as other areas of the economy have been discussed in the preceding seminars. As regards the overall picture in agriculture sector, 1973-74 was a normal year, followed by deterioration in 1974-75 and recovery in 1975-76 according to the five major indicators—area under cultivation, yield per hectare, area irrigated by different sources, the quantity of fertiliser used and and the output of food grains and commercial crops, to these may be added the sixth indicator, rural credit. This area of the economy, contributing 41 per cent of the State's net domestic product and employing 75 per cent of the labour force is heavily dependent on rainfall, with all its variations. The situation calls for a comprehensive water management policy, comprising improvement of water storage, facilities, exploitation of ground water, experiments in drip and sprinkles methods of irrigation to conserve available supplying of water and extension of research based dry land agricultural practices. A beginning has been made in implementing some of the required measures at farm level and further research projects are under way. In industry, on the other hand, no definite trend is discernible in 1975. The static index of industrial production in 1974 and 1975 at 196.7 and 196.6 can be attributed to the set back in agricultural production in the earlier year. However, there have been variations in specific industries. Fertilisers, electrical goods and wheat products registered sharp rises, while textiles, edible oils, sugar, motor vehicles, bicycles and rubber goods showed fall in production. The two majors for decline in some of the consumer industries were a falling of in demand and fall in per capita income in the State. The third sector under review is electricity, both thermal and hydel. The State's installed capacity does not include power generated at Neyveli, but the installed capacity has increased from 1,654 to 1,764 M. W.

in 1975-76. The output of 5,722 million units is well below the installed capacity. The consumption of electrical power has considerably increased in domestic, industrial and agricultural areas. The failure of the S. W. monsoon and the resulting reduction in generation of hydel power led to heavy power cuts in 1974-75 and power had to be purchased from Neyveli and the neighbouring States to meet the needs. The power problem posed in the State by the increase in demand for power will be resolved by large measure when Kalpakkam goes on stream and additional power from Neyveli is available. An analysis of the price levels, which completes the review, shows that the rate of price increase was higher in Tamil Nadu than the National levels. A study carried out in 1975-76 in seven industrial centres of the State reveals that the consumer prices were higher in Tamil Nadu in all selected areas than at the National level and consumer prices rose mostly in June, July, August and thereafter declined. A further study of eight rural centres by the Directorate of Statistics revealed irregular price movements.

During the ensuing discussion it was pointed out that the satisfactory performance in agriculture in 1975-76 was mostly due to adequate rain fall, a non-plan element which does not provide a firm base for development plans in this key sector. A special feature of rainfall in Tamil Nadu is that the S. W. Monsoon provides water supply for hydro-electricity and the N. E. monsoon for agricultural production. Another factor which our planning must take into account is that the Mettur water supply has become uncertain due to Karnataka's development plans and the samba crop strategy, particularly in Thanjavur, has gradually to work towards reliance on ground water and conservation. The different indices used in evaluating the performance of the industrial sector showed varying norms of registration, particularly with regard to small industries and practices of data collection. The evident stagnation in this sector in 1975-76 has to be viewed against the absence of Central investment in the State in the IVth and Vth plans, which would have provided the necessary fillip to the growth of medium and small industries as well. Another constraint has been the power shortage in the State. While Neyveli and Kalpakkam would eventually provide additional generation, immediate measures must be directed towards improvements in higher level of utilisation of installed capacity, which stands at a low 41 per cent and reduction of transmission losses. Even a 25 per cent increase would bridge the energy gap. The rise in prices which began in May 1974 was sharpest in food and clothing. The CSO statistics reveal that price rise is very much higher in rural areas than in urban. It was observed that the decline in supply of water from Mettur was not of recent origin. Even the distribution of available supply was hampered by the lack of administration at administrative levels between the many government departments involved in the management of the rural economy. Curiously in Thanjavur there is also the problem of regional water logging. If we are to come to grips with water distribution, a regional grid seems to be the ideal solution. In this context, a national policy for resource utilisation was suggested, along the lines of the Federal Water Commission in U. S. A. An integrated water policy would reduce regional imbalances in some measure. The instance was cited of Thanjavur having three crops while the neighbouring Pudukottai

was having only one on the average. Another example was Coimbatore with its chronic drinking water shortage while adjacent Kerala had excess water. Resource utilisation policies should be aimed at the creation of viable regional economic units rather than being framed within the constraints set by administrative boundaries. Commenting on the collection of statistical data at grass root levels, it was observed that these were maintained and furnished by village officials without any formal training. The Madras University Certificate course in data collection could be extended with benefit to the village officers cadre and others involved in data collection in rural areas. In summing up, it was observed that as efforts to evolve national or regional policies had met with poor response from the State, realistic planning in Tamil Nadu should locate and utilise ground water resources, improve water storage by restoring neglected tanks and oornies and rationalise use of available water, reducing dependence on rainfall or the Cauvery system. It was reiterated that the role of Central investment is a key factor in improvement of the State's industrial growth. In the energy sector, the better utilisation of installed capacity is a policy priority.

There was general agreement that the utilisation of natural resources, especially water and power, required a regional if not national planning. Though statistical data available was fairly comprehensive further standardisation of procedure and training at grass-root level was desirable. The State's economy appears to be poised for rapid advance. We are, however, still a long way from succeeding in the attack on unemployment and poverty.

THE ROLE OF THE UNIVERSITY IN INTEGRATED RURAL DEVELOPMENT*

Integrated Rural Development :

The National Programme of Integrated Rural Development has a double origin against the backdrop of the poverty of our rural people—poverty which encompasses the lives of 40 to 60 per cent of its people, depending on whether we use the nutritional norm of the "minimum needs" norm. The first source of the Programme is the two year old Karimnagar experiment of the C S I R, where the resources of its national laboratories and those of the ministries of Agriculture and Health are being deployed to increase the productivity of the people of the district of Karimnagar in Andhra Pradesh. The second source is the deliberations and conclusions of the 1976 session of the Indian Science Congress at Vishakpatnam, where the congregation of Indian scientists for the first time in the history of the congress successfully geared their disciplinary and interdisciplinary papers, exchanges and conclusions to the means whereby the sciences could be used to attain the national objective of the removal of rural poverty.

It is out of these two sources that the Union Government's memorandum of Integrated Rural Development has been established and constitutes the directive for the programme. Its basic features are two. One, the integrated use of all of our science and technology resources to survey, identify and inventory the resources—natural, material and human—of the rural areas and out of this to use science and technology to develop and operate feasible projects. Second, the projects should be chosen and executed in areas and in a manner to raise the incomes of those in the selected rural area living below the poverty line, so that their incomes can be raised to or above that line.

Against this brief outline of the programme, the question of defining the role of the universities in the programme might be considered. This role can be considered under two broad heads.

The University and Integrated Rural Development :

First, the University's role in the Union Government's programme of Integrated Rural Development. The Union Government has selected one backward district in each of the 22 States and Union Territories and has allocated Rs. 13 crores for the integrated use of Science and Technology in the 22 districts. The programme, on an all India basis, is being managed by a Committee of Scientists headed by the Director General of I C A R, with the Department of Rural Develop-

*Extracts from Dr. Malcolm S. Adiseshiah's paper for the Association of Indian Universities, Coimbatore—January 17-19, 1977.

ment in the Ministry of Food and Agriculture acting as the co-ordinating agent. One of the first tasks of the management of the programme is to locate a village in the selected district where a science and technology complex is to be established.

For this Union Government programme, the Agricultural University in each State should take the leadership in bringing together the science faculties and technology institutions in the State, to help in the planning of the programme in the selected district and in executing through research and development one or two of the projects as and when they are approved and established. The Tamil Nadu Agricultural University which organised in early September such a planning meeting for this State is forming a consortium of University institutions which will help in the execution of the projects, and has itself adapted the selected district—Dharmapuri—for special survey and research work in certain selected areas, such as its socio-economic condition, mulberry cultivation, sugar beet cultivation, paper board pulp from the local weeds, animal husbandry etc.

The University and Village adoption

A second role of the University is to use its science and technology resources in order to apply them for surveying the rural area of its choice and executing projects which do not require large capital costs. For this, every university should plan and execute a village adoption programme. In the case of affiliating universities, each affiliated college as well as the departments of the university should each adopt a village. In the Madras University, the 50 university Departments have adopted or are at work in the villages the 160 affiliated professional and arts and science colleges have each adopted a village.

This university work done by the students in the village adoption programme is a part of the semesterised curriculum in all post-graduate programmes and in 41 selected colleges at the undergraduate level. This part of the curriculum which is called Community end Social Service requires two hours of supervised work per week by each student and has a maximum of 100 marks which he/she can earn towards his/her degree.

The reason why Community and Social Service is made part of the curriculum (and is not regarded as extra-curricular or co-curricular) is that the learning process requries both exercises in abstraction, theory building and conceptualising, and what is more difficult but equally imperative in a complete learning process, applying the theory to the world of work. It is for this reason that in this part the curriculum, the students' village work is as far as possible related to his discipline—a Physics student to repair and help in the maintenance of agricultural or power implements, a Chemistry or Geology student to work on fertiliser use or soil analysis, a Botany or Zoology student to improve the crop yield or animal husbandry, a Sociology student to survey the rural social structure and assets ownership, the engineering student to developing appropriate technologies to improve small, cottage and home industries or organise the desilting of tanks and ponds, the medical student to serve in the Primany Health Centre or sub-centre, the language student to run adult literacy and education programme, the Home Science student to improve the nutrition and protein intake of the pre-school child and the pregnant and lactating mother,

the History and Archeology student to identify, clean and preserve the local monument etc. The essential feature of the Union Government programme is, it will be recalled, to deploy the science and technology resources of the country to deal with the problems of rural poverty and this basic element the village adoption programme of the universities and their affiliated colleges must preserve.

The resources needed by the university of the affiliated college for the village adoption programme are minimal but essential and within their reach. The NSS grant to each member is one small but essential resource which can pay for tools, travel to the village and back etc. In the case of viable projects, such as small equipment for home crafts or for animal husbandry, loans from nationalised banks are readily available provided the university or college helps in making the project feasible. There are two additional expenses which must be met. There is need for the village adoption programme and the Community and Social Service in each college for a full-time staff member with social work qualification to co-ordinate and catalyse the programme. This staff post must be admitted by the State Government in its grant-in-aid to the college. Second, some colleges will need a transport—a bus or a minibus or a jeep for transporting students and staff to the village and back. This should be a priority permissible item on a 100 per cent grant basis under the up to Rs. 5 lakh UGC development grant for each college.

The University will also need to issue guidelines on the organisation, supervision and assessment of the work done by each student under this village adoption programme, much like the regulation and scheme of examination issued by the Board of Study for the learning in the discipline. There is also need for UGC/State Government funds to be used for training the staff engaged in supervising and directing this programme along with the training and orientation courses organised for the NSS programme officers.

Some General Considerations

There are some considerations with which I end this note. First, except in the case of the universities, under the leadership of an agricultural university, participating in the Union Government's programme in the 22 selected districts, (and even in those cases), the basic approach of the university's role in the village adoption programme, is not that the university and its colleges are going to revolutionise the socio-economic life of the chosen village and abolish its poverty. The university/college activity is intermittent, fragmented and semiterminal, —2 or 3 hours a week, long summer vacations, a changing student population, with no real access to capital resources. The Integrated use of science and technology to remove or alleviate rural poverty is a full-time professional task. All that the university/college community can do in this regard is to help the rural community become aware of the needs and resources and organise itself, particularly the unorganised exploited rural poor, to share in decision making and so raise their living levels with the help of government resources. To my mind and this is the basic approach of the Madras University which is that through this programme, it is the rural community which is helping the university/college community by making the learning and research process complete, by bringing together theory and practice, conceptualisation and its testing in our rural life. It is the village which is serving the univer-

sity/college to be the university/college—to attain that unity of knowledge and truth which is the hall-mark of the *Universitas.*

Second, the specific and somewhat unique learning that this nexus with the village programme makes possible is that it leads from the grounding in our separate disciplines which is the university's special forte to the multi-disciplinary, inter-disciplinary and sometimes *trans-disciplinary* learning and research which confrontation with rural life makes possible to the universitarians. There are no physics problems, chemistry problems, economic problems or anthropological problems *per se* in rural life. The rural problems are poverty, underemployment, mal-nutrition, lack of housing or drinking water and so on and for this problem centred conspectus not only have the separate natural, social, physical, technological and human science discipline to interact with each other, in the process, for viable actions they have to borrow from each other their tools, techniques and models, learn each other's methodologies and language, make one discipline's parameters another's data base, and in some cases, lead to the merging of concepts. It should always be remembered that in so deploying our science and technology resources, the university is acting as the technical consultant to the rural community, not the principal actor in the drama, who is the poor villager.

Third, there is a further task incumbent on the university in this programme, with its social sciences equipment,—represented by political science and public administration, psychology, sociology, anthropology, economics and geography—it can undertake an objective, scientific survey of the social and political structures in the village, covering such sensitive areas as land, wealth and factor ownership, power relations, processes of decision making, and the nature and social class of the decision makers and the social, cultural and political preconditions necessary for the success of the integrated deployment of science and technology on the rural poverty situation. So much of scientific and technological resources invested todate for raising rural levels of living, whether it be irrigation, annimal husbandry development or the technological package associated with the Green Revolution, has some how ended up in the hands of the so-called "progressive farmer" who is always the well-to-do farmer and the relatively well-off rural minority and has left aside the small, marginal and dry farmer and the landless agricultural labourer who constitute the rural poor. What are the social processes and political frameworks which account for this bypassing of the rural poor and how can they be restructured so that the programme of Integrated Rural Development is effectively slanted towards the rural poor? University social science resources through their survey and research effort can bring to light these somewhat explosive issues. It can at least break through the current conspiracy of silence that beclouds this grim reality. Decisions on it are of course outside the purview of the university's universe of discourse. But there must be recognition that this function of the university in regard to development involves questioning the *status quo* and will involve some amount of tension, some degree of unrest and some element of disruption of the existing unjust order.

Fourth and finally, there are certain recognised stages in the consultant help that the university/college is called upon to offer in the rural development pro-

gramme. The first is the choice of the unit of operation. It could be a village or group of hamlets or a block or a taluk or a district. This unit selected will be a function of the resources available to the university/college. Whatever the rural unit selected, it must be a backward one, backward in terms of per capita or family income, employment, housing, health and education facilities. The second stage is the survey referred to earlier. For the survey of natural and material resources, there should be a review of what has already been done by the State Government, the lead bank, APC or other agencies. In Tamil Nadu, for instance, most rural areas have already been surveyed for their natural resources, in some cases with the help of UNDP, or a consortium of banks etc. and even the interpretation and analysis of the results of the survey completed. The university should obtain this documentation from the State Government. Where such a survey has not been made, the question arises whether the university's scientific and technological resources are adequate and can be deployed on a full-time basis for such a techno-economic survey. My own feeling is that this is a professional full-time job which should be undertaken by a government or public agency. The social survey of the chosen area, on the other hand, is a university/college responsibility and can and should be undertaken with as much scientific precision as possible. The third stage is the development of schemes in regard to ownership structures, land and water use, food and non-food crops, animal husbandry, afforestation, agro-industries, cottage and home crafts, housing, roads, health and nutrition and education—non-formal, vocational etc. The development of the schemes must be on a project feasibility basis. Finally, there is the stage of choice of schemes for operation by the univesity/college. Schemes calling for capital must be developed on a professional basis with full-time management and technical staff, with capital fairly easily available for viable projects from the banks. Schemes not calling for such large financial resources are those which can be operated by the university/college.

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